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OIL SPILL CLEANUP COSTS

HEARING

BEFORE THE

COMMITTEE ON FINANCE
UNITED STATES SENATE

ONE HUNDRED FIRST CONGRESS

FIRST SESSION

ON

S. 771 and S. 1066

JUNE 21, 1989

Printed for the use of the Committee on Finance

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OIL SPILL CLEANUP COSTS

WEDNESDAY, JUNE 21, 1989

U.S. SENATE,
COMMITTEE ON FINANCE,
Washington, DC.

The hearing was convened, pursuant to notice, at 10:00 a.m., in room SD-215, Dirksen Senate Office Building, Hon. Lloyd Bentsen (chairman of the committee) presiding.

Also present: Senators Rockefeller and Symms.

[The press release announcing the hearing follows:]

[Press Release No. H-37, June 15, 1989]

SENATOR BENTSEN ANNOUNCES HEARING ON OIL SPILL BILLS

WASHINGTON, DC—Senator Lloyd Bentsen (D., Texas), Chairman, announced that the Finance Committee will hold a hearing on two bills dealing with oil spill cleanup costs.

The hearing is scheduled for June 21, 1989 at 10 a.m. in Room SD-215 of the Dirksen Senate Office Building.

"The entire nation—and indeed, the world—was appalled by the *Exxon Valdez* oil spill," said Bentsen. "These bills represent different approaches to address this kind of environmental disaster. This hearing will give the Committee the opportunity to examine each of these approaches more closely and determine whether the Committee should take action in this area in the future."

S. 771, introduced by Sen. Harry Reid (D., Nevada), would deny Federal income tax deductions for the costs of cleaning up oil spills and other hazardous substance discharges, unless the taxpayer made a good faith effort to comply with Federal cleanup standards. Revenues resulting from deductions disallowed under this provision would be dedicated to the Clean Water Act Fund in the case of oil spills and the Superfund in the case of hazardous substance spills.

S. 1066, introduced by Senator John Chafee (R., Rhode Island), is the oil spill legislation proposed by the Administration in May of 1989. Among other provisions, the bill would modify the uses to which the Oil Spill Liability Trust Fund could be put, and impose a 1.3 cents per barrel tax on oil and imported petroleum products to finance the fund.

OPENING STATEMENT OF HON. LLOYD BENTSEN, A U.S. SENATOR FROM TEXAS, CHAIRMAN, SENATE FINANCE COMMITTEE

The CHAIRMAN. This hearing will come to order.

On March 24 of this year, the oil tanker, *Exxon Valdez*, ran aground on the Bligh Reef. It spilled over a quarter of a million barrels of oil into Prince William Sound. The entire Nation has been appalled by this disaster and the pictures we have seen of the beaches, the wilderness, and the Alaska peninsula covered with oil.

The *Exxon Valdez* spill is the largest recorded in U.S. history. It has refocused public attention on the hazards of oil shipping to the environment. It has raised questions about our ability to prevent and respond to catastrophic oil spills.

Today we are going to hear testimony on two legislative proposals responding to this problem. S. 771, introduced by Senator Reid, would disallow a tax deduction for oil spill cleanup costs unless the taxpayer had made a good faith effort to comply with Federal cleanup standards.

The other one is S. 1066, introduced by Senator Chafee on behalf of the Administration. That bill would impose a 1.3 cents per barrel tax on oil and imported petroleum products to finance a trust fund to pay for oil cleanups. While S. 1066 is principally within the jurisdiction of the Environment and Public Works Committee, the Finance Committee has jurisdiction over the tax portion.

Today, we will be taking a close look at these two bills. We have been trying to find answers to some important questions, such as: Do these proposals represent a prudent, effective tool to prevent or ameliorate oil spills? Are the resources that the Administration is proposing to raise for the oil spill trust fund adequate to respond to a major accident of the magnitude of the *Exxon Valdez?* Is the Tax Code an effective instrument to promote responsible actions by persons handling hazardous substances or would other means be more effective, more efficient?

We have a distinguished panel to shed some light on these issues, to provide us some guidance on what, if any, action Congress and this committee should take. We will hear from officials from the Treasury and the Transportation Departments, from industry representatives and from environmental organizations.

We look forward to that testimony. I think it will be quite helpful to us in trying to arrive at the proper decision and course of action.

[The prepared statement of Senator Bentsen appears in the appendix.]

The CHAIRMAN. To lead off, we have a Senator who has been deeply concerned with this issue and has spent a good deal of time developing his proposed response, the distinguished Senator of Nevada, Senator Reid.

STATEMENT OF HON. HARRY REID, A U.S. SENATOR FROM NEVADA

Senator REID. Thank you very much, Mr. Chairman.

Today's hearing on oil spill legislation represents another step toward enacting measures to prevent or at least minimize tragedies such as that experienced in Alaska's Prince William Sound. I sincerely commend your attention and that of your committee to this issue, and appreciate the opportunity to speak before the committee about my proposed oil spill amendment.

Mr. Chairman, to place things in the appropriate context, let me briefly trace the chain of events by which this amendment developed. On April 13th, I introduced S. 771, the Oil Spill Bill, because Exxon was planning to get a tax write-off for cleaning up the mess they created. I thought that was wrong. So did millions of Americans and countless members of Congress, both Democrats and Republicans, from all parts of our country.

As the enormity of the damage to Alaska's economy and environment increased, and questions about Exxon's responsiveness multiplied, I recognized the need to put this bill on a fast track. I, therefore, introduced the Oil Spill Bill with some modifications as an amendment to the Supplemental Appropriations Bill. Despite the support expressed for this measure by many of my colleagues from both parties, I withdrew my amendment so that this committee—the Finance Committee, the committee with jurisdiction over tax policy—could hear and consider this relevant matter in greater detail.

Mr. Chairman, this legislation I propose will not die. My office has been literally flooded with mail from all over the country. Just as an example, my office alone has received these torn up Exxon credit cards. Here is a few of them we—they were sent cut up, of course, in letters from people who had credit cards.

So, Mr. Chairman, I believe the *Exxon Valdez* aftermath gives us no other choice——

The CHAIRMAN. Let me understand what you are saying. Are you saying those are credit cards that were torn up?

Senator REID. Yes. Mr. Chairman, these are cards that I have received in my office. Frankly, some of these are not even torn up. Some of them were just sent to me saying, "I'm not going to do business anymore with Exxon." This is from C.V. Galedy. But they are from all over the country. Most of them were cut up.

The CHAIRMAN. It seems they are very trusting sending in their credit cards like that. [Laughter.]

But go ahead. I am sorry.

Senator REID. Especially coming from a gambling State.

The CHAIRMAN. Let me say, Senator, that I am very appreciative of your seeing that this goes through the committee process here. This is a very difficult, complex and emotional issue. I think it requires careful study to be sure that we do the appropriate thing. I am appreciative of your work on it.

Senator REID. Mr. Chairman, I agree wholeheartedly. That is why I, without any hesitation, agreed to the Chairman's request. I have also spoken to Governor Sonunu—met with him at his office at the White House and told him that I thought this was an appropriate piece of legislation to become part of the President's oil spill liability legislation. So I have no pride of authorship. I would have no objection, whatsoever, if this were made part of an overall bill with the President's legislation.

Mr. Chairman, this oil spill was much worse than anyone ever anticipated. We can point the finger of blame to Exxon, which, of course, was admittedly ill prepared. Their delay and inefficiency in cleaning up the spill turned a local catastrophe into the single worse environmental disaster in our Nation's history. But pointing fingers at this stage does not do any good. This tragedy is compounded by the sinking of an oil skimmer in Prince William Sound just 2 days ago.

Given the company's dismal clean-up performance in this instance and the permanent scar that now defaces Alaska's beauty, it is incomprehensible that Exxon should be able to claim its clean-up costs—some estimate as high as $600 million—as an ordinary and necessary cost of doing business. That would be the equivalent of

the Federal Government forking over a $200 million tax refund check to Exxon.

I do not want to tell my constituents that the American people owe Exxon, the biggest polluter at this stage in the history of our country, millions of dollars in a tax rebate in turn for destroying the environment and literally raising prices at the gas pump. This committee knows that the American people do not want to be told that either.

It is our responsibility to use the Tax Code and the IRS to make Exxon and other companies responsible and accountable for their actions.

Mr. Chairman, as one of the authors of the Taxpayers' Bill of Rights which became law last year I am mindful of how our country's tax laws are implemented and how our policies affect the average American taxpayer, and how this committee led the charge on this important legislation. Without this committee being the advocate, the Taxpayers' Bill of Rights legislation would not have become law. That is why I feel comfortable bringing the oil spill bill before this committee.

The Taxpayers' Bill of Rights represents progress toward a more equitable treatment of taxpayers. But the recent Exxon fiasco turns back the clock in some people's mind on our progress. Why should the American taxpayer pay for this cleanup? The practice of claiming clean-up expenses as a tax deduction gives corporations absolutely no incentive to be responsible in times of crisis. There is not even an incentive to take preventive actions to avoid the occurrence of such tragedies.

My amendment will provide this greatly needed incentive. It will disallow the deduction for cleaning up spills of oil or hazardous substances, if the Federal Government certifies that the cleanup has not been conducted in accordance with standards established by the Clean Water Act or Superfund. The Internal Revenue Service would be notified by the Coast Guard or the Environmental Protection Agency.

My bill will require very little of the IRS. The burden of itemizing cleanup costs lies with the taxpayer. The EPA or Coast Guard is responsible for certifying the cleanup. The IRS is required only to collect taxes. The determination of environmental damage is not transferred to or shared by the IRS. The proposed tax deduction would also be denied in cases where the spill is a result of negligence or willful misconduct.

Revenues accruing to the Federal Treasury from the lost deduction will be dedicated to the Clean Water Act Fund in the case of oil spills and Superfund in the case of hazardous substance spills. Taxpayers will have a year to meet tax liabilities arising from the notification to the IRS of their inadequate cleanup efforts.

My amendment also stipulates that companies who do not meet certification standards will be unable to claim a tax deduction for the cost of property lost or damaged as a result of the spill. For example, Exxon could not deduct the cost of salvaging the *Valdez*.

The oil spill amendment is a potential revenue raiser. In these times of deficit spending and budget crisis, this amendment could provide sources of needed revenue without any hardship on the American taxpayer. New money, but no new taxes. Revenue esti-

mates have been requested from the Joint Committee on Taxation. I expect to receive that information soon and, of course, it will be made available to this committee.

My amendment lifts an unfair burden from the American taxpayer and places it squarely on the shoulders of corporate responsibility where it should be. My amendment will give companies the bottom line incentive to effectively clean up oil and hazardous waste spills.

Mr. Chairman, also my bill requires a study be conducted to determine how much has been lost to the Federal Government as a result of deductions taken for cleaning up this type of environmental degradation in the past—from 1970 up to this date. If companies want to claim the cleanup costs as a tax deduction, they have to earn it. If companies are faced with the prospect of losing a deduction, I believe they will take additional preventive measures so that spills do not occur.

I would note, Mr. Chairman, as I am sure this committee has, that this morning's news is replete with the oil companies now coming forward and saying that they need to develop a better program. It is in all the newspapers. And one of our colleagues is quoted as saying that the oil industry plan was like calling for more life boats on oceanliners 3 months after the *Titanic* went down.

If companies are faced with the prospect of losing this deduction, I believe they will take additional preventive measures so that spills do not occur. The cost for these measures remain deductible under my bill. Given the many problems that beset Exxon and the company's admitted lack of a plan to deal with such a disastrous oil spill, Exxon's chief executive officer, Lawrence Rawls, was asked what advice he would give other CEO's facing a crisis of similar magnitude. His response, incredibly was, and I quote, "Have a public affairs plan."

My amendment might cause Mr. Rawls to change his response, telling other corporate executives that a crisis management plan—not a public relations plan—should be the top priority. I would like to see this amendment acted on as quickly as possible, whether considered as a separate piece of legislation, or as I indicated before, included in the Administration's Comprehensive Oil Pollution Liability and Compensation Act.

I believe time is important. We would be forcing ourselves to view this tragedy as a one-time nightmare. But oil and toxic waste spills, like nightmares, are often recurring events.

The Interior Department recently estimated that there is a 94 percent chance that a major oil spill will occur off the California cost within the next 30 years. The Lieutenant Governor of California, Leo McCarthy, said, "It's not a matter of whether we'll see something like this . . . . it's when will we see it."

If we maintain the status quo, we will continue giving companies tax deductions for their cleanup expenses and related property claims regardless of the company's responsiveness or negligence. If we maintain the status quo, we make it clear that the costs of cleaning up catastrophic oil and chemical spills is merely an ordinary and necessary cost of doing business.

We cannot, and absolutely should not, accept such actions under the guise of "business as usual." If we do, we forfeit our ability to invoke corporate responsibility at the tremendous expense of the American taxpayer and the environment. This is not business as usual. This, Mr. Chairman, is injustice.

My constituents are aware of this injustice and have expressed their outrage through a stream of correspondence and as I indicated earlier, these credit cards that have been severed in half. In response to the concerns of the American people and to the problems inherent in the existing tax treatment of oil spills, I ask that this committee take action.

In adopting my legislation, the Oil Spill Bill, which will cover both oil and hazardous waste spills, will as I indicated previously, raise revenues; will not measurably increase the IRS workload; and will offer a tremendous tax incentive for companies to clean up and prevent spills.

Again, Mr. Chairman, I appreciate your leadership on this issue and many other issues. I appreciate your allowing me to appear here today. I would be glad to answer any questions, although I have just received a beep from the Majority Leader, so I cannot answer too many.

[The prepared statement of Senator Reid appears in the appendix.]

The CHAIRMAN. I have had a few beeps from him this morning myself.

Senator, we are delighted to have you as the leadoff witness, particularly because of your having devoted the time to prepare legislation to address this issue.

As I understand, you would deny the deduction for any cleanup costs that had taken place.

Senator REID. Unless they do a good job and the Coast Guard or EP says they have done a good job, and then they get their deduction.

The CHAIRMAN. All right. It seems to me there might be a perverse result in some instances. Let us suppose you had one company that had completed 90 percent of the cleanup job—and another company that completed only 20 percent. Now I think you would want to encourage them to do as much as they could. In that example, it seems to me that your proposal is an additional penalty on that company that has done a better job, because it would lose a bigger tax deduction.

Senator REID. Under the bill, as written, the guidelines would be the Clean Water Act and Superfund. And if a company had met those guidelines, which are not 100 percent, because nothing is ever perfect, they would be able to get the deduction. I think that the examples that you have given, the company that did the 90 percent job would get their full tax deduction.

The CHAIRMAN. You think they would get their full deduction?

Senator REID. I think they absolutely would, yes.

The CHAIRMAN. Okay. How about 60 percent?

Senator REID. Yes.

The CHAIRMAN. The point I am getting to is, the one that is doing more is denied more of a deduction, as I understand your bill. If he has done a 60-percent cleanup and another company has

done a 20-percent cleanup, the one that has done 60 is denied, let's just say, $60 million in expenses and the other one is denied $20 million. And yet, you would want each company to do more.

Senator REID. I think there would be an incentive for the company that did the $20 million to do a better job because they would get nothing. The company that did the $60 million, I think with a little bit of effort, I think they could meet the standards of the Clean Water Act and/or Superfund. Because as I have indicated, those standards, as the EPA has come to learn very slowly but surely, that have been set are not perfect standards. I think that we would have to, as we do in a lot of governmental agencies, make a determination as to whether or not they had made a good faith effort and had met the reasonable standards of the Superfund or the Clean Water Act.

I think it is a doable deal. I do not think it is that difficult.

The CHAIRMAN. All right.

Let us look at another option. Suppose the company says let's just hire foreign tankers to come in and do this job, since they are not affected by tax benefits in this country. How would you influence that with your legislation?

Senator REID. I do not know, Mr. Chairman. I think that is something for the experience this committee has, to figure that out. That is not incorporated in my bill as to what would happen with a foreign shipper. I frankly do not know and I would have to call upon the expertise of this committee.

The CHAIRMAN. Looking at another approach, suppose they create a very thinly capitalized company since they have very little equity involved, they would collapse the corporation if a spill occurred.

Senator REID. But in that example, it is easy to answer because they would have no incentive to clean it up anyway. There would be no incentive to clean it up anyway. So we would be stuck with that regardless.

The CHAIRMAN. All right. Well, this is helpful to us and we appreciate having your testimony.

Senator REID. The second question you asked, I cannot answer it. I am sorry. I will certainly look into that. But that is not something that I have looked into—about foreign liability.

The CHAIRMAN. Okay. Thank you very much, Senator.

Senator Stevens, we are very pleased to have you.

STATEMENT OF HON. TED STEVENS, A U.S. SENATOR FROM ALASKA

Senator STEVENS. Thank you, Mr. Chairman.

Mr. Chairman, let me file my statement, if you will.

The CHAIRMAN. Yes, of course.

[The prepared statement of Senator Stevens appears in the appendix.]

Senator STEVENS. I am here today to tell you that based on the frustration we have had with the cleanup that is underway in Alaska, we support the concept of Senator Reid's bill and you have already mentioned some of the caveats that are in the statement I

filed. We do believe that there ought to be some process for certification of a job as "done enough."

I brought to you—Admiral Yost was in to see me the other day and he brought me three bottles of rocks from the beaches in Alaska and I will send them up for you so you can see where the problem is, Mr. Chairman. One of them is clean rocks; one of them is oiled rocks; and another one is clean gravel. Now this is clean gravel under the system that is being used up there today. And you can see that even after it is cleaned, it still has substantial amounts of oil on it.

We believe there ought to be some system that will give an incentive to do the job right. We have just brought a bill, by the way, out of the Commerce Committee that deals with the concept to a certain extent, in that the contingency plans for cleanup would be required for each tanker and for each area to be approved by the Secretary of transportation so that we can see in advance what the plans are for cleanup.

This is such a subjective thing, as you pointed out, as to what is clean. Now based on what was there before the cleanup started, the Coast Guard has admitted that this gravel is as clean as it is going to get under the systems that are available to us today. That is the difficulty with the circumstance we have up in Alaska now.

I would like to leave with an article from the Anchorage Daily News that was brought to my attention just yesterday, in which it is pointed out that in terms of this cleanup, on a subjective basis in certain portions of the cleanup area—you have got to remember there is 700 or 800 miles of oiled beaches now and there are clean up crews in charge of each one—and on a subjective basis, the person in charge is telling the workers when it is clean and when it is not clean.

In this one instance, as reported in this article of June 17, the people who were working quit. When interviewed by the newspaper, they were told that they were instructed to use only their hands and not to use any tools of any kind. He said it was hard to pick up oil. It just goes through your fingers—but they have gloves on, of course—and they cannot pick it up and put the gravel with the oil on it in bags, so they were using shovels to pick this up in finding ways to clean it off. The team was doing pretty well, they thought, and then the Exxon experts came along and said, you cannot use shovels. We have decided you cannot use any mechanical means in terms of this cleanup.

The CHAIRMAN. Why is that? I do not understand that.

Senator STEVENS. Mr. Chairman, we are still trying to figure out why they have ruled out the use of mechanical equipment on some beaches and not on others.

But as a practical matter, when it comes right down to it, someone has to be in charge. Of course, that is another thing that our Commerce Committee bill will do. In major spills it would put the Coast Guard in charge. Admiral Yost has asked Exxon to put more people at work outside of Prince William Sound and there is more beaches oiled outside of Prince William Sound than there is inside, although the oil on the beaches is heavier within the Sound than it is outside of the Sound.

In a final analysis, he just does not have charge. He has been appointed by the President to support the party at fault—Exxon. But the reason I am here is that I just want to tell you I think Senator Reid has a good idea. It will take, as he admitted, some flushing out. But there ought to be some way to say to a company, you cannot deduct and then, therefore, pass onto the taxpayers at least 34 percent of the cost of what they have expended—the expenses of clean—unless you have met some standard.

I think the Coast Guard is capable of setting that standard. They have an on-site Commander. I would require a sign off of the Coast Guard in each instance. If they say it is cleaned up, they can deduct the expenses; if it is not, if they cannot say that, if the Coast Guard will not approve it, then I do not think they should be able to deduct it. I think that is a significant incentive to compliance with the Coast Guard's requests.

That is my message to you. It is very reluctant—I am sure you know, Mr. Chairman—that I really feel that we have reached the point where we have little alternative but to support some concept like the one that Senator Reid has brought before us.

The CHAIRMAN. Well, none of us know with great certainty. But I feel quite sure that you are going to see more of these accidents happen as the years go on, perhaps in some of our major cities that have ports. How would you address the question I asked of Senator Reid? Why wouldn't an oil company just hire a foreign tanker to do the job and thereby not be subject to the bill?

Senator STEVENS. In terms of Alaska, Alaskan oil has to be carried—In terms of our situation, Alaskan oil has to be carried by U.S. tankers with one exception, and that is the Hess tankers that have the right to use tankers other than U.S. manned tankers to take their oil to St. Lucia, as you know. But basically a port in the United States is required for Alaskan oil to be U.S. tankers. We are not going to have foreign tankers in there.

The CHAIRMAN. Yes, but it is not just Alaska, it is our entire coast.

Senator STEVENS. I understand that.

The CHAIRMAN. You have a Libyan tanker coming into your——

Senator STEVENS. Over 50 percent of our oil today is being carried on foreign tankers today.

The CHAIRMAN. Yes.

Senator STEVENS. We are addressing that, as you know, in the overall question of the liability for a cleanup. Incidentally, the bill that is coming out of Commerce will require that we have contingency plans for those tankers because the foreign tankers may be denied entry to our ports under this bill unless they have a contingency plan for cleanup, approved by the Secretary.

The CHAIRMAN. But that does not apply to the legislation that is in front of this committee. That is why I was referring to Senator Reid's legislation.

Senator STEVENS. Senator Reid's idea dovetails because if we put the responsibility on all tankers for a plan to clean up, the question is, when is an area cleaned up. You would be interested to know that it costs, according to my estimates, somewhere in excess of $2,000 a barrel to get oil off the water in the Prince William Sound. It cost over $10,000 a barrel to get it off the beaches in

Prince William Sound. There is economic incentive to do it right, is what I am saying.

But when it gets out of hand the way it did up our way, someone has to have the final approval in terms of what standard is going to be applied on a subjective basis to each area.

The CHAIRMAN. Senator, I would not argue that point at all. I am addressing this specific piece of legislation before our committee. In my example, where one company might do 60 or 80 percent of a cleanup effort and another company does 10 percent, the one that does 60 or 80 percent, which you are trying to encourage, would suffer more of a penalty as I interpret this piece of legislation, than the company that did a 10-percent cleanup. I do not think that is what you are seeking.

Senator STEVENS. Well, each would be denied the benefit of the tax laws unless someone certified that they had met standards for cleanup that were established in the beginning.

The CHAIRMAN. Absolutely, Senator. But one of them would have done maybe two-thirds of the job. And you are trying to get them to do as much of the job as you can. They would be denied all they spent; the company that paid for a 10-percent cleanup would be denied a much smaller deduction.

Senator STEVENS. Well, under the Clean Water Act, of course, the only 10 percent, the Coast Guard has the obligation to step in and do the other 90 and bill them. The question then comes back to your statement concerning the responsibility of the foreign tanker to pay those charges. That is another question.

But in terms of the cleanup, under Senator Reid's approach or the existing Clean Water Act, it will be done. If the Coast Guard is the one to make the determination as to whether a private party has done the job sufficiently, I assure you they are not going to set a standard for them that they cannot meet themselves. We think the Coast Guard ought to be the party to make such certifications.

Again, I expect the committee is going to be a little reluctant to tamper with the tax laws in this regard. But I think it is very healthy, if nothing else, Mr. Chairman, to talk about it. These people ought to know that there are standards the public will require in terms of cleanup and that there are means for the public pursue if they do not meet those standards that the Nation requires.

The CHAIRMAN. Well, I would not argue with that at all, Senator. I am trying to find the best avenue to apply the penalties. That is what we are trying to determine, it seems to me, to put the pressure on them to do the job that has to be done and to meet the standards.

Senator STEVENS. Well, let me just get informal, Lloyd, and tell you, I helped—I was at the Department of Interior when we created Padre Island National Park. You take a look at that little jar of gravel in front of you and see whether you would think that would be clean if it was Padre Island.

As far as the industry is concerned, it is clean, as far as Prince William Sound is concerned. I would invite you to put your finger in it and pull out or see—How would you like to walk on that beach?

The CHAIRMAN. Let me tell you, I am not for this.

Senator STEVENS. I understand you are not. That is why we are urging you——

The CHAIRMAN. I feel that it is an extremely serious problem and it has to be addressed. I am looking for the most effective course. That is what I am seeking.

Senator STEVENS. I understand that.

The CHAIRMAN. And whether it can best be done through the Tax Code, or it can best be done by the Commerce Committee, or the Environment and Public Works Committee, with penalties on the company. That is what we are trying to determine.

Senator STEVENS. It may require a combination of all three, Mr. Chairman.

The CHAIRMAN. Well, it may.

Senator STEVENS. Thank you.

The CHAIRMAN. Thank you.

Senator STEVENS. Let me put all of these in the record, if I may.

The CHAIRMAN. Let me give this back to you, if I may.

Senator STEVENS. I am sure of it. [Laughter.]

The CHAIRMAN. Our next witness is Hon. William O. Lipinski, U.S. Representative, State of Illinois. We are very pleased to have you, sir.

STATEMENT OF HON. WILLIAM O. LIPINSKI, A U.S. REPRESENTATIVE FROM ILLINOIS

Representative LIPINSKI. It is a pleasure to be here, Mr. Chairman. I thank you for the opportunity to speak on behalf of S. 771, the Oil Spill Bill. As you know, I have introduced identical legislation, H.R. 2532, in the House. At the present time, we have 69 sponsors for that legislation.

This bill will benefit both the environment and the taxpayers. It will provide long overdue incentives for companies to follow existing laws and to clean up oil and toxic chemical spills. The Oil Spill Bill will make a simple change in the Internal Revenue Code which will end the automatic deductibility of cleanup costs.

Watching the response to the Exxon oil spill in Alaska, we can see that current law allowing cleanup costs to be deducted as "ordinary and necessary business expenses" is simply wrong. Oil and toxic spill cleanup is not "ordinary" and is not a "necessary" business expense. These cleanup expenses should not qualify as a routine "cost of doing business in America." The spill in Prince William Sound has been a profound lesson in unnecessary and extraordinary negligence.

Under the Tax Code, as it now stands, Exxon is entitled to deduct 34 percent of its cleanup expenses from taxable income. Original estimates projected that the cost of cleaning up would be over $600 million. More recent costs have estimated it to go as high as $1 billion. Coast Guard commandant Paul Yost testified earlier this week that Exxon is spending $100 million a week on the cleanup effort. Even with almost $600 million covered by insurance, the projected tax break for Exxon alone could easily top $50 million.

The American taxpayers are already overburdened. Our economic habitat is deteriorating under the strains of Federal deficits in an eroding infrastructure. Our taxpayers need relief and assist-

ance. At the very least, we need the Oil Spill Bill to avoid the cost of uncompleted and botched cleanups from being passed on to the taxpayers.

The American environment is also deteriorating. We cannot afford more pollution, oil or toxins, washing ashore or contaminating our soil for years to come. Those responsible for pollution must clean it up promptly and efficiently. The Oil Spill Bill will prevent companies from getting tax breaks for oil and toxic chemical spill cleanups they have not completed or for spills caused by their willful negligence or willful misconduct.

This bill provides direct incentives for companies to obey existing laws and to promptly, effectively and thoroughly clean up their pollution. It is a vital aspect of a responsible Congressional response to the disastrous Exxon spill in Prince William Sound. This bill provides for a tough system of incentives which will encourage cleanups and punish misconduct, but will not penalize companies who act swiftly and responsibly to clean up a simple accident.

Indeed, this bill will further encourage the American companies who are environmentally responsible and thus work to build a more competitive economic economy overall. The Oil Spill Bill will protect our environment, our taxpayers and our budget from irresponsible polluters.

Thank you very much, Senator.

The CHAIRMAN. Thank you very much, Congressman. We are pleased to have you. Thank you.

Representative LIPINSKI. Do you have any questions?

The CHAIRMAN. No. Thank you.

Representative LIPINSKI. Thank you very much.

The CHAIRMAN. Our next witness is Hon. Kenneth Gideon, Assistant Secretary for Tax Policy, Department of Treasury. Mr. Gideon, we are pleased to have you.

STATEMENT OF HON. KENNETH W. GIDEON, ASSISTANT SECRETARY FOR TAX POLICY, DEPARTMENT OF THE TREASURY

Mr. GIDEON. Thank you, Mr. Chairman. I am pleased to have this opportunity to present the views of the Treasury Department regarding the tax implications of the two bills dealing with the serious and recurring problem of spills of crude oil and other products in our Nation's waterways.

I will start by discussing S. 1066, which as you previously noted is an Administration-supported effort, which proposes to set up a cleanup fund as part of a comprehensive Oil Spill Act. I will then turn to S. 771, which would disallow deductions for costs incurred in a cleanup program that is not found to be in good faith compliance with certain Federal standards.

The Administration strongly supports S. 1066, which would enact the Comprehensive Oil Pollution Liability and Compensation Act of 1989. S. 1066 has several components designed to achieve a number of important goals, including the assurance of fiscal responsibility of crude oil shippers, implementation of international conventions on oil spills and activation of the oil spill liability trust fund.

Today, I would like to address the provisions that concern the oil spill financing rate, the fee, and the oil spill liability trust fund,

which we refer to as the fund. I would like to start briefly by reviewing the purposes of the fund before turning to the amendments to the Internal Revenue Code proposed by the bill. Under S. 1066, the fund would consolidate the functions of a number of separate oil spill funds that have been established over the years. The fund would be available to cover costs of cleanup and natural resource restoration which exceed the liability limits of the polluter.

The fund would also provide a source of immediate money for such operations and then would seek to recover these amounts from liable polluters up to their liability limits. In cases where a polluter proves financially unable to satisfy its liabilities, the fund would end up bearing all or a part of the cost of the cleanup. Thus, the fund constitutes a measure of insurance that would spread the risk and provide a savings fund for any future spills.

The fund provides three separate sources of money for the new fund. Initially, the balances of the two existing cleanup funds, the Off Shore Oil Pollution Compensation Fund and the Deep Water Port Liability Fund are to be rolled into the fund when it becomes operational. The balance of these funds is approximately $152 million.

Second, the fund has received the proceeds from a 1.3 cent per barrel fee to be levied on all domestic and imported oil. We estimate that the fee would generate revenues to the fund of approximately $296 million, assuming an effective date of July 1, 1989 and a termination date of June 30, 1994.

Third, the fund would recoup cleanup and restoration costs from liable polluters.

I would like now to turn to the provisions of the Internal Revenue Code that are affected by S. 1066. The 1.3 cent per barrel fee, that would be collected under the bill, is found in Section 46.11(c) of the Internal Revenue Code. It was enacted into the Code by the Omnibus Budget Reconciliation Act of 1986. The fee would be collected on the same base as a hazardous substance Superfund fee, thus it would be imposed generally on all crude oil received at a U.S. refinery, domestic crude oil used in the United States, before being received in a U.S. refinery, and upon imported petroleum products.

A credit against a taxpayer's liability under Section 46.11(c) is provided by Code Section 46.12(d) for amounts that were paid prior to January 1, 1987 to the Off Shore Oil Pollution Compensation Fund and the Deep Water Port Liability Fund. Code Section 95.09 establishes that fund as part of the Trust Fund Code, which is another subtitle in the Code.

S. 1066 would make four changes to the provisions of the Code that currently control the fee. First, under current law, the fee is scheduled to expire at the end of 1991. However, that termination date was selected in 1986, meaning that the originally enacted fund would receive revenues for approximately 5 years. Since the bill would start collection of that fee 30 days after enactment, the bill extends the termination date to an expected termination of June 30, 1994. The purpose of that expansion is to ensure that, assuming timely enactment, the fund receives approximately the amount of revenues contemplated in 1986 when the fund was established.

Second, S. 1066 would amend Code Section 95.09 in order to conform the rules to those in the new bill.

Third, the limitations on expenditures are changed. Under old law, basically, there was a limitation of $250 million per incident. As a result, we think that, given our experience with the *Valdez* incident, the President should have the ability to waive those limits and this bill sets higher limits for fund expenditures.

The CHAIRMAN. What are those limits?

Mr. GIDEON. In current law or in the bill?

The CHAIRMAN. Under the bill.

Mr. GIDEON. Under the bill, the base limit would be $500 million; but the President, for a good cause, could waive that limit if it were necessary.

The CHAIRMAN. What we are looking at, as I see it, are two different approaches. One option is to put all the costs on the one that is guilty of the spills. The other extreme is to spread the costs, across all taxpayers. What I see in S. 1066 is a wedding of the two approaches. As I understand it, the one that causes the spill would carry primary responsibility up to the limits of the bill, is that correct?

Mr. GIDEON. That is correct.

The CHAIRMAN. And the President would have the right to waive that limit?

Mr. GIDEON. Well, to waive the fund's liability. In other words, the fund has an expenditure limit per incident.

The CHAIRMAN. Okay. But you have the limit of liability on whoever caused the pollution; any shortfall is made up by the fund.

Mr. GIDEON. Right.

The CHAIRMAN. That's right.

Now what concerns me is the 1.3 cents per barrel. Is that sufficient? As I understand it, it starts out collecting about $30 million a year?

Mr. GIDEON. Due to the credit system, yes.

The CHAIRMAN. Do you think that the fund would really build up fast enough to respond to a major oil spell?

Mr. GIDEON. Well, I am going to leave to my colleagues at Transportation to respond to you on the level of the fund. However, what we have proposed is a system that would, with credits and the like, build a fund of approximately $450 million when all collections have been received. That fund, of course, if not used, could continue to draw interest and it would receive contributions. In other words, that fund is a secondary resource. The polluter is the primary resource.

The CHAIRMAN. I understand that.

Mr. GIDEON. The fund could recover any expenditures.

The CHAIRMAN. Now, the 1.3 cents a barrel, isn't that a new tax? I know it is in the tax law, but I also know it has not been imposed. So aren't you in effect asking for a new tax?

Mr. GIDEON. Well, we believe that it was there in 1986.

The CHAIRMAN. And I am reading your lips very carefully. [Laughter.]

Mr. GIDEON. I understand you, Senator.

I think we believe that this provision was in the Code. It should have been activated earlier. Due to the fact that the implementing

legislation did not get in place, it was not. We believe that it is appropriate to impose this, and appropriate to impose it for the proper period.

We do not see it as a new tax. It has been there since 1986.

The CHAIRMAN. But not imposed.

Mr. GIDEON. But not imposed.

The CHAIRMAN. You do not consider this a duck?

Mr. GIDEON. Not a duck.

The CHAIRMAN. Very interesting. Thank you.

Now could you comment on Senator Reid's bill, that Senator Stevens also spoke for, about how it could be narrowed or how it might be combined with the approach that you are supporting in S. 1066?

Mr. GIDEON. Well, we certainly oppose it in its current form and we question whether it could be reformed sufficiently for some of the reasons that you have already raised here. In fact, in my written statement I raised precisely the hypothetical you raised—that it has the disincentive effect of penalizing least those who do the least, and penalizing most those who do the most and fall slightly short.

If you compare it with other situations in the Federal Tax Code where we disallow deductions, it also seems to me has the precisely perverse effect that the Chairman has pointed out in that when we disallow deductions for bribes, that is the activity itself that we want to discourage. Denying a deduction for a cleanup, however, seems to me as accomplishing the wrong disincentive. We want to encourage expenditures for cleanup. To deny a deduction for those cleanup expenditures strikes me as taking us in the wrong direction.

The CHAIRMAN. Well, I would like to hear you speak to the other point. You put the primary liability on whoever created the problem. But, beyond that amount of money, in effect you are having other taxpayers pay for the excess costs. Do you think that is right?

Mr. GIDEON. Well, first of all, it is not the public generally. In other words, this fee is collected on barrels of oil. Now granted, that might pass through to consumers, but I think that the key point is that we are attaching this liability strictly to the industry that gives rise to it. In other words, it is targeted; in effect, it is a user fee on petroleum.

The CHAIRMAN. Senator Symms.

Senator SYMMS. No questions, Mr. Chairman. Thank you very much.

The CHAIRMAN. Thank you, Mr. Secretary.

Mr. GIDEON. Thank you.

[The prepared statement of Mr. Gideon appears in the appendix.]

The CHAIRMAN. Our next witness is Mr. Joseph Canny, the Director of the Office of Transportation Regulatory Affairs. We are pleased to have you. If you would proceed.

STATEMENT OF JOSEPH F. CANNY, DIRECTOR, OFFICE OF TRANSPORTATION REGULATORY AFFAIRS, OFFICE OF POLICY AND INTERNATIONAL AFFAIRS, DEPARTMENT OF TRANSPORTATION

Mr. CANNY. Thank you, Mr. Chairman. I appreciate the opportunity to present the views of the Department of Transportation regarding S. 1066 and S. 771. Secretary of Transportation Skinner has stated that passage of comprehensive oil pollution liability and compensation legislation is a top priority of the Administration. Consequently, we very much appreciate the action of your committee in scheduling an early hearing focusing on the financing aspects of the proposed legislation.

S. 1066, introduced by Senator Chafee, as you noted, incorporates the Administration's proposals. It would establish a system of liability and financial responsibility for vessels and facilities involved in the handling of crude oil and oil products. High liability limits would be established for the responsible parties to assure that cleanup and damage costs are borne initially by the spiller. The supplemental fund financed by a fee assessed against oil produced or imported into the United States would cover any cleanup and natural resource restoration costs in excess of the liability limits of the responsible party. In the vast majority of cases—more than 95 percent of all spills, based on our experience over the past 15 years—the cleanup and damage costs would be totally compensated within the spiller's liability limits. The fund would only be used in those rare, catastrophic spills where exceptional costs are incurred.

Another important feature of the Administration's proposal is that it would provide for the implementation of two international Protocols dealing with the same subject—oil pollution. The international Protocols offer important benefits which would not be available to us under a strictly domestic scheme.

The principal features of the Administration's proposals are summarized in the charts which are attached to my written testimony. The charts compare the Administration's proposal with two other bills currently being considered by the Congress. The funding provisions in the Administration's bill are similar to those developed by this committee and your House of Representatives counterpart in the 1986 Omnibus Budget Reconciliation Act, as Mr. Gideon noted. Mr. Gideon's statement addresses the key features of the trust fund financing mechanism, as well as the Administration's perspective on S. 771.

I do not wish to duplicate any of the points which he has made, but would be pleased to respond to any questions from you or the committee members.

The CHAIRMAN. Well, let us get back to the point about the adequacy of the fund. Mr. Gideon stated that it should be directed to the Department of Transportation.

As I understand the 1.3 cents per barrel tax, it stops once you get up to $300 million. I have heard estimates of $600 million to clean up the *Valdez* spill. Do you think $300 million is enough?

Mr. CANNY. We think the $300 million would be sufficient to cover all but the most extraordinary spills; $300 million would be

far more than enough to cover every spill in history, except the *Exxon Valdez* spill. In addition to the 1.3 cent per barrel fee on oil that is authorized in the Tax Code at present, there is borrowing authority so that the fund could be replenished directly by Treasury borrowing, if necessary, to pay extraordinary costs above the $300 million level. We would expect that that borrowing ability——

The CHAIRMAN. There is borrowing ability for the fund?

Mr. CANNY. That is correct.

The CHAIRMAN. To what limits?

Mr. CANNY. $500 million.

The CHAIRMAN. $500 million in excess of the $300 million?

Mr. CANNY. That is correct.

The CHAIRMAN. Or to carry it to $500 million?

Mr. CANNY. $500 million in excess of the $300 million.

The CHAIRMAN. And who makes that determination?

Mr. CANNY. That would be made by the Secretary of Transportation; it would be authority delegated to the fund administrator. It would be based upon the conditions of the spill and cleanup process.

The CHAIRMAN. Can you provide us for the record—not now, but for the record—evidence substantiating the need for a $300 million fund and how you arrived at that number?

Would you answer for the record, please?

Mr. CANNY. Yes. I will provide that for the record.

My recollection—the history of it—is that that number was initially generated in the Congress rather than in the Administration. But I will give you an explanation.

The CHAIRMAN. That is fine, if you will provide that for me.

Mr. CANNY. Sure.

[The information requested follows:]

IN RESPONSE TO THE INQUIRY RESPECTING REASONING FOR THE $300 MILLION LIMIT ON TAXES CREDITED TO THE OIL SPILL LIABILITY TRUST FUND

Section 4611(f)(3) of the Internal Revenue Code directs the Secretary of the Treasury to estimate, on a quarterly basis, the amount of taxes, attributable to the Oil Spill Liability Trust Fund, which will be collected. Should the estimate of the Secretary indicate that more than $300 million in taxes will be credited to the Fund prior to the termination of the tax, the financing rate for the Fund will terminate on the date the Secretary's estimate indicates that event will occur.

Our files do not indicate that the Executive Branch took a position on section 4611(f)(3) at the time of its enactment in the Omnibus Budget Reconciliation Act of 1986.

Bills relating to comprehensive oil spill liability and compensation, which were considered by Congress prior to the 1986 Act, typically provided for Funds financed by administratively regulated fees. Amounts were to be maintained at statutorily prescribed levels, for example between $150 million and $200 million in H.R. 85 considered by the 96th Congress. (By comparison, the Offshore Oil Pollution Compensation Fund is to be maintained between $100 million and $200 million, 43 U.S.C. 1812(d).) It is likely that section 4611(f)(3), was modeled on those earlier fund financing provisions, taking account of intervening inflation.

In our view $300 million is adequate to provide financing for the purposes of the Trust Fund proposed in S. 1066. The combination of a $300 million Fund balance, plus borrowing authority for an additional $500 million, on top of the spiller's liability and financial responsibility limits, should be entirely adequate to cover virtually any contingency.

The probability of a second *Exxon Valdez* incident, while it exists, is very low. Should such a disaster occur, S. 1066 provides the means by which the per-incident compensation limit can be raised above $500 million and we would anticipate that the Congress would be informed and consulted on the need for additional funding in

such circumstances. (It should be noted that under S. 1066 an incident involving a tanker such as the *Exxon Valdez* will be subject to the 1984 Civil Liability and Fund Protocols. The latter Protocol would enable the United States to spread the costs associated with the spill globally, and to benefit from contributions made by oil receivers in foreign countries which are parties to the Protocols. Those contributions would aid substantially in paying claims and returning monies advanced from the U.S. Treasury to the Trust Fund.)

The CHAIRMAN. Apparently, they had some hearings at which they arrived at that number. But it seems strange to me that you would not increase that number after what you have learned from what has been the worst environmental oil spill that we have had in the history of this country.

You ought to update it, with the latest information. I do not understand, after having a spill that costs $600 million to clean up, why you would put a $300 million ceiling on the fund.

Mr. CANNY. Well, again, we think that the combination of the resource is actually in the fund, plus the borrowing authority available to it should be sufficient to cover $600 million and more.

The CHAIRMAN. Senator Symms.

Senator SYMMS. No questions, Mr. Chairman. Thank you very much.

Mr. CANNY. Thank you.

[The prepared statement of Mr. Canny appears in the appendix.]

The CHAIRMAN. All right. Thank you very much.

Next we have a panel consisting of Mr. Charles DiBona, President of the American Petroleum Institute; Mr. Paul Huard—how is that name pronounced, would you help me?

Mr. HUARD. Huard.

The CHAIRMAN. What?

Mr. HUARD. Huard.

The CHAIRMAN. Huard. Thank you. Mr. Huard, who is the vice president of taxation and fiscal policy department, National Association of Manufacturers; and Mr. Robert Roland, who is the president of Chemical Manufacturers Association of Washington, DC.

Mr. DiBona, if you would proceed, please.

STATEMENT OF CHARLES J. DiBONA, PRESIDENT, AMERICAN PETROLEUM INSTITUTE, WASHINGTON, DC

Mr. DiBONA. Thank you, Mr. Chairman. My name is Charles DiBona. I am President of the American Petroleum Institute and we welcome the opportunity to testify regarding S. 1066—the Administration's Oil Spill Bill—and S. 771, which would deny deductions for costs of cleaning up oil spills and other hazardous substance discharges.

In addition to my presentation today, we will be submitting a written statement for the record.

The CHAIRMAN. That will be taken in its entirety.

Mr. DiBONA. Thank you.

[The prepared statement of Mr. DiBona appears in the appendix.]

Mr. DiBONA. Mr. Chairman, the tragic oil spill in Alaska as Prince William Sound underscores the need to move ahead with programs for spill prevention and response capability, including legislation covering oil spill liability and compensation.

API strongly favors a comprehensive approach necessary to deal immediately with any oil spill in any U.S. navigatable waters. We stand ready to provide all the assistance we can to Congress to achieve this objective.

An API Task Force, established to review industry operations in the area of oil spill prevention and response released its report yesterday which offers recommendations for significant industry action in three areas—prevention of spills, response to spills and spill-related research. We believe the recommendations provide the basis for a meaningful dialogue with the government in developing a cooperative approach to the oil spill issue.

We do not believe that the negative punitive use of the Tax Code contemplated in the amended version of S. 771 is a useful or appropriate way to achieve the desirable goal of protecting and preserving our environment and natural resources. Aside from the many technical flaws of S. 771, which we will detail in our written statement, the more fundamental objection to the bill is not on policy grounds, it is simply bad legislation. What makes it even worse is that it was made retroactive to target a single company.

First, it would establish a precedent which is bad tax policy. The underlying goal of the corporate income tax is to levy a tax on the profits of business operations. The Tax Code is a matter of sound tax policy and has for many years recognized that business expenses, even when compelled by unusual and unexpected events, reduce both profits and, therefore, taxable income.

Second, it sends exactly the wrong message. There are antideductibility provisions in the Code, wherein on public policy grounds specific expenditures are disallowed as deductions in order to discourage such expenditures—the paying of bribes, for example. S. 771 turns this concept exactly on its head. The bill discourages the very expenditures which are clearly in the public interest and should be encouraged.

It sends the message that whatever cleanup costs a taxpayer incurs, he runs the risk of having them denied at some future time because he does not—or cannot—meet standards defined and administered, not in the Tax Code or by the Treasury and the IRS, but determined by the commandant of the Coast Guard or the administrator of the EPA.

Third, the Tax Code is not the right place for this purpose. If punishment is the objective of the legislation, the Tax Code is not the proper enforcement devise. In those rare instances where willful misconduct, or willful negligence establish fault, there already exists numerous specific civil and criminal penalties under Federal and State laws. And penalties imposed under those laws are not deductible for income tax purposes.

Let me turn now to S. 1066—the Administration's proposed legislation. The fundamental premise of oil spill compensation and liability arrangements should be that all legitimate claims must be paid, and all claimants who have incurred actual losses must be compensated to the full extent of those losses.

Therefore, the API believes comprehensive Federal oil spill liability and compensation legislation should incorporate four fundamental principals. First, the spiller should be on the front line, re-

sponsible for removal costs and damages directly resulting from the spill up to the applicable liability limit.

Second, a reasonably size fund should be created through contributions from companies that handle oil, to supplement the cost of removal, and compensation for direct damages over and above the liability of the spiller.

Third, all oil spill removal costs, economic losses directly resulting from the discharge, and actual costs incurred to restore or replace environmental loss should be compensated.

Fourth, the comprehensive Federal regime should be the only liability system for a discharge of oil into the marine environment. API is concerned that S. 1066 does not effectively meet the fourth principal. S. 1066 also outlines provisions to implement the international civil liability convention and fund convention in their respect to Protocols. These instruments, which involvement international oil spill liability and compensation arrangements have not been ratified by the Senate.

There are questions as to how these complex arrangements would interface with domestic oil spill law under consideration and the precedents they would have. The trust fund provisions of the Administration's bill would authorize the President to waive the current law expenditure limit for $500 million per incident and to establish a higher limit if he determines it is necessary. It also extends the expiration date, but leaves in place the $300 million cap on the fund.

API is actively reviewing S. 1066 and would be prepared to offer more in depth comments on those specifics at a later date.

I would conclude, Mr. Chairman, by reemphasizing that API recognizes that our industry must do its utmost to prevent future oil spills and to respond effectively to them when they do occur.

The CHAIRMAN. Thank you.

Mr. DIBONA. Clearly, it is imperative that we move rapidly to improve our understanding of and capability to deal with these tragic accidents.

The CHAIRMAN. Thank you, Mr. DiBona. We will have to move along. Thank you.

Mr. Roland.

STATEMENT OF ROBERT A. ROLAND, PRESIDENT, CHEMICAL MANUFACTURERS ASSOCIATION, WASHINGTON, DC

Mr. ROLAND. Mr. Chairman, thank you. I am Robert Roland, president of the Chemical Manufacturers Association.

CMA is a nonprofit trade association whose member companies represent 90 percent of the productive capacity for basic industrial chemicals in this country. The chemical industry provides jobs for more than 1 million U.S. workers and continues to be a strong positive contributor to our trade performance. In 1988 exports of chemicals totalled $32.5 billion and provided a positive trade balance of $11.5 billion.

S. 771 would, in general, disallow a deduction for income tax purposes of oil or hazardous substances cleanup costs. The bill provides an exception, however, if the taxpayer can obtain certification from the EPA or the Coast Guard that it has made a good faith effort to

comply with standards of the Clean Water Act in the case of oil discharges, or of the Comprehensive Environmental Response Compensation and Liability Act—CERCLA or Superfund—for discharges of hazardous substances.

Unfortunately, we believe that S. 771 would discourage many companies from taking the immediate action necessary to avoid serious harm to persons or the environment in the event of a hazardous material spill. Cleaning up spills or releases needs incentive, not disincentive.

And let me say, that no matter what the Congress decides to do in this matter, the membership of CMA will continue to respond to accidents involving its products without hesitation. Our industry is very proud of its efforts to prevent accidents and to minimize damage should accidents occur.

We also appreciate, perhaps more than others, what the public expects and demands of us. It demands that we do the best that we can to prevent accidents, to do things as safely as we know how and it demands that when we make a mistake we respond quickly and effectively.

What concerns us about S. 771 is that we believe many companies responsible for a spill, some discharge of a hazardous material, would hesitate to take action. Worse, some may decide that for their own protection they would simply sit on their hands and wait for the EPA or the Coast Guard to tell them what to do before doing anything.

For many years, Section 162 of the Internal Revenue Code has provided that taxpayers may deduct, for income tax purposes, all ordinary and necessary business expenses. This proposal, however, would penalize prompt and immediate action to clean up any discharge of hazardous substances by placing these expenses in a special category.

It is relevant to mention that recent Price Waterhouse studies concluded that the effective tax rate of my industry—the chemical industry—was 37.2 percent in 1987. We anticipate the chemical industry's rate will continue to be near the statutory maximum, notwithstanding the fact that cleanup costs are now deductible as ordinary and necessary business expenses.

Section 162 is consistent with the tax treatment of most of our major trading partners. Based on our information, 17 nations, including most of those in western Europe and Japan, treat such expenses similarly. S. 771 should be unacceptable to this committee for yet another reason. The bill creates unnecessary confusion for the government officials who must enforce the Superfund and Clean Water Acts. The Superfund remedial cleanup process now is expensive, technically difficult and procedurally complex. In many instances, several years may be required to complete cleanup activities at a given Superfund site.

A responsible Federal official, operating under the terms of S. 771 could well question whether granting a certificate immediately following an accidental discharge could later prejudice EPA's overall and long-term responsibilities for cleanup and recovery. Therefore what to do.

The terms of S. 771 would apply to all cleanups of hazardous substance discharges. This, of course, would include cleanups to which

the Clean Water Act and CERCLA legislation would apply. But it would also apply to discharges on the taxpayer's own property and the voluntary cleanups of multi-party sites as well as those undertaken pursuant to RCRA or State authorities. These important cleanup efforts may not be required to meet Clean Water Act or CERCLA standards. Under S. 771, all direct and indirect expenses attributable to that effort then may not be deductible.

The bill would produce, I think, an administrative nightmare for both industry and government. It could apply literally to any number of events, most of them involving very minor problems. Delay, paperwork, and time-consuming litigation would be inevitable and costly. Delay is a real cost to the companies involved, even when a deduction is ultimately allowed.

Because the potential loss of significant tax deductions on some major mishaps cannot be foreseen, S. 771 would inject major uncertainties into the costs of U.S.-based production. This bill would, therefore, create a major disincentive to U.S.-based product and a relatively competitive advantage for foreign-based producers. CMA urges the committee on Finance to continue the deduction for Federal income tax purposes of expenses directly and indirectly attributable to the cleanup of hazardous substances and to reject the tax amendments proposed in S. 771.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Mr. Roland.

[The prepared statement of Mr. Roland appears in the appendix.]

The CHAIRMAN. Mr. Huard.

STATEMENT OF PAUL R. HUARD, VICE PRESIDENT, TAXATION AND FISCAL POLICY DEPARTMENT, NATIONAL ASSOCIATION OF MANUFACTURERS, WASHINGTON, DC

Mr. HUARD. Thank you, Mr. Chairman. I am pleased to be here today to present the views of our members on S. 771 NAM is unalterably opposed to this type of legislation; first, because it is bad tax policy; and second, because it would discourage the very conduct that it seems to promote.

Broadly applied, the logic underlying S. 771 would convert the Federal income tax from a system primarily intended to raise government revenue to an alternative enforcement mechanism for the Nation's thousands of nontax regulatory statutes. The average business today is probably subject to dozens, if not hundreds, of Federal, State and local laws mandating compliance with certain standards.

In the ordinary course of events, a certain number of businesses, many of which may have acted in total good faith, will be out of compliance with one or more such standards. Under the rationale of S. 771—if you implement this precedent and then carry it through its logical conclusions—the Federal income tax laws would become a device for imposing sanctions on such noncompliance by denying deductions for expenses and losses incurred in connection with the noncomplying activities.

Such a scheme carries with it the potential for enormous mischief. For one, even a minor infraction in relation to an expensive activity could result in total disallowance, thus imposing a punish-

ment wholly disproportionate to the offense. Another extremely troublesome feature of the concept embodied in S. 771 is that it would involve nontax agencies of the Federal Government in the administration of the Internal Revenue Code.

Further, because the burden of proof in tax disputes is typically adverse to the taxpayer and favorable to the Commissioner, businesses could lose valuable due process protections they would otherwise be entitled to if, instead of a backdoor approach through the tax laws, the government proceeded against the alleged noncompliance under the penalty provisions of the regulatory statute in question.

In our view, tax provisions in the nature of penalties should be used only to encourage compliance with the tax laws and to punish noncompliance with such laws. Use of such provisions as an alternative enforcement mechanism for nontax statutes is, for the reasons outlined above, an extremely dangerous precedent which we urge this committee to reject completely.

While we believe the foregoing deficiencies are by themselves sufficient to warrant abandonment of S. 771, there are yet other reasons why legislation of this type is just plain bad tax policy. It would further complicate and destabilize a tax system which already is excessively complex and notoriously unpredictable.

Business planning and the correct determination of tax liability are difficult enough under the Byzantine tangle of income tax provisions already in effect; a difficulty that in this decade has been greatly exacerbated by the tendency of the Congress to indulge in major revisions of the tax laws on a nearly annual basis. We do not need to make the situation worse with ad hoc responses to each sensational accident or other incident that is susceptible to the approach taken in S. 771.

Moreover, the open-ended statute of limitations under S. 771 makes it virtually impossible to achieve any finality in the determination of tax liability for past years, a situation universally viewed as undesirable by taxpayers and tax administrators alike.

Another objectionable feature of S. 771 is that it would adversely affect the international competitiveness of U.S. firms. While the short notice given for this hearing did not permit detailed research, our preliminary review indicates that none of our industrialized competitors imposes deduction disallowances similar to those in S. 771. Given our existing trade deficit situation, we certainly should not be taking actions that will worsen the competitive posture of U.S.-based producers.

Finally, S. 771 would further erode the long-standing concept of the Federal tax on business income as a tax on net income. That is, a tax on gross income, less all costs incurred in producing such income. This sound concept has been weakened in recent years by ill-conceived approaches such as imposing percentage limitations on certain types of business expense deductions. This process, if continued, will ultimately convert what is now still largely a tax on net income to a tax on gross business receipts, which given the wildly differing profit margins and different kinds of businesses is, in our view, a singularly inappropriate and unfair basis for levying taxes.

In addition to our objections on tax policy grounds, NAM also is seriously concerned that the approach taken in S. 771 would discourage businesses from taking prompt, positive actions in response to industrial accidents. Because the sanctions of S. 771 are so draconian, a likely response is that taxpayers involved in oil spills or hazardous substance discharges will undertake very little cleanup activity on their own initiative, but instead will choose to protect the deductibility of their expenditures by awaiting specific directions from the applicable government agency.

For all of the reasons outlined above, NAM urges the committee on Finance to reject S. 771.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Huard appears in the appendix.]

The CHAIRMAN. Mr. Huard, I listened to that comment of yours about the Congress and its propensity to change the tax laws. I think that is a valid complaint, but don't tell me it is just Congress. As I recall, the 1981 tax bill was proposed by the Administration and then carried out by the Congress, as well as the bills in 1982, 1984, 1986, 1987. And now, in 1988, the Administration is talking to us about raising a net of $5.3 billion in taxes. It has been a joint effort.

Mr. HUARD. I will be glad to amend my comment to include the Administration.

The CHAIRMAN. Thank you.

Mr. HUARD. That was an oversight.

The CHAIRMAN. I get a little tired of the oversight, though.

Now, let's get to the Reid bill, which I have obviously criticized on some points. Senator Reid does have a very good point insofar as having the responsible party carry the burden. But, you can have other people in this industry doing a very adequate, careful job. Under S. 1066, the Government is going to pick up a substantial part of the burden, if you have an enormous spill like the *Valdez* and the company does not have the financial strength of Exxon. Is it fair to ask other taxpayers to carry the burden?

Let me have your comments--anyone one of you—on that. That is the effective thrust of the Reid bill, put all the burden on the responsible party.

Mr. DIBONA. Yes. Well, in the case of the oil spill liability bills 1066 or the others that have been proposed in the past, there are several principals involved.

The first principal is that the front line on cleanup costs goes to the spiller—goes against the spiller. So a substantial initial increment is involved and in this case it is up to $78 million. This certainly is a deterrent if anyone needs one against spills. No one plans a spill or wants to have one and takes steps to prevent it. So on you on one hand have a clear responsibility laid against the person who spills for a very substantial part of any cleanup.

So I think it mitigates that and I think all of us recognize that there is the potential, not because anyone wants to see it happen, or because they are not being careful, but it can happen at sea—a very large accident can occur, even with the program that we outlined yesterday in which the industry will be spending a quarter of a billion dollars to put in place. We cannot guarantee people. We

cannot guarantee that there will not be a very major spill at some time.

It is reasonable to have insurance beyond some platform or level that is carried by all of the movers or receivers of oil.

The CHAIRMAN. Well, let me get to another point.

Mr. DIBONA. We see that as a reasonable thing.

The CHAIRMAN. All right. But you were talking about a reasonably-sized fund. We are often accused of basing our preparations on the last war. Here, we are talking about a fund of $300 million, which is substantially less than the cost to clean up the *Valdez* incident.

Don't you think we should have a fund that is ample to pay for large spills?

Mr. DIBONA. We think that the fund should be big enough to handle a very large spill. We have not objected to the size of the——

The CHAIRMAN. Well, you all are now authorities on a very large spill.

Mr. DIBONA. Pardon?

The CHAIRMAN. You folks in the industry are now authorities on a very large spill

Mr. DIBONA. Yes.

The CHAIRMAN. You just had one.

Mr. DIBONA. Yes.

The CHAIRMAN. Shouldn't the fund be large enough to take care of that?

Mr. DIBONA. Yes, we think that it should be large enough to take care of a very large spill, with the, of course, spiller on the line for the first increment; and we think it should be large enough so that other spill funds are not necessary. That is, it ought to be big enough to handle a spill any place in the United States and should, therefore, pre-empt individual State legislation.

So we would prefer to see a bigger fund devoted to dealing with a spill any place, rather than a proliferation of smaller funds. We think it provides greater safety to the country and to each individual State than to have smaller separate funds.

The CHAIRMAN. Senator Rockefeller.

Senator ROCKEFELLER. Thank you, Mr. Chairman.

I obviously did not hear the testimony and I apologize for that. We were at the White House, Mr. Chairman, trying to protect Lone Star Steel.

I understand that—I would figure that you all opposed legislation that would disallow a tax deduction for oil cleanup expenses.

Mr. ROLAND. That is correct, Senator.

Mr. HUARD. Yes.

Senator ROCKEFELLER. We have the worst oil spill tragedy in the history of the country as far as, I think, conventional wisdom would show that. The necessary precautions—most of us who observe it, would say—were not taken. cleanup efforts would be called, I think properly, pathetic.

A CRS study says that immediate cleanup expenses of more than $100 million have been incurred, and this does not include to date damages to natural resources or the loss of income due to loss of work. Now, if you are trying to get incentives to make sure that

such a thing does not happen again, you cannot just kind of say, "Gee, I hope it does not happen."

Based on the record, it would seem to me, of oil spills—and particularly this last one—doesn't that indicate that we need to make sanctions more severe? Does that not indicate that?

Mr. DIBONA. Could I answer? Could I address that?

Two things. One——

The CHAIRMAN. If I may interrupt. I apologize, gentlemen, but I am involved in legislation on the floor and I am going to have to get over there.

Mr. DIBONA. Senator, I would say two things about that. One is, if sanctions are appropriate, there are other places to bring that about—other parts of the legislature—other than the Tax Code. The Tax Code is an inappropriate place to carry that out.

Senator ROCKEFELLER. Why isn't it appropriate? If it is effective, why is it inappropriate?

Mr. DIBONA. Because it is not effective. It does the opposite of what you think it would do. That is, if these arrangements are in place, you would discourage the activity that you want to encourage.

Senator ROCKEFELLER. Now that is not quite true.

Mr. DIBONA. Well, you are talking about——

Senator ROCKEFELLER. You mean we would discourage—how would we discourage that?

Mr. DIBONA. Your assumption is that people might or might not want to have a spill. Once you have a spill, your assumption is that by doing this people would be discouraged from having spills. Once a spill occurs, whatever the cause may be—it could be a natural cause—once that occurs, then what you want to do is have people spend money to clean the spill up.

You are more likely to encourage that if it is treated as it should be as a necessary business expense than if it is not treated as a necessary business expense. So the effect of such a law would be to discourage, not encourage the cleanup. With regard to the question of whether or not people are taking adequate precautions, there are in other provisions of the law penalties for people who are negligent or do not take due care. So there is a place to do that——

Senator ROCKEFELLER. You think the penalties are sufficient?

Mr. DIBONA [continuing]. And this is a poor place to do it.

Could I also raise a question?

Senator ROCKEFELLER. Do you think the penalties are sufficient?

Mr. DIBONA. Pardon?

Senator ROCKEFELLER. Do you think the penalties in the existing law are sufficient?

Mr. DIBONA. Well, they are broad and any penalties paid are not deductible under the Tax Code and that ought to be a question that is separately addressed.

Senator ROCKEFELLER. Well, I am separately addressing it to you right now. I mean, do you think that the penalties, or the disincentives, that is, to what has just happened, which is the worst oil tragedy ever, do you think the disincentives are thusly adequate?

Mr. DIBONA. I think—yes, I believe that. I do not think anybody wants to have a spill. I did not think Exxon wanted to have a spill. I think that we have taken additional steps within the industry.

Senator ROCKEFELLER. Nobody wanted to have coal mine disasters either.

Mr. DIBONA. That is right.

Senator ROCKEFELLER. I mean, operators did not want to have coal mine disasters, but that does not mean that you do not create disincentives and you create more situations of safety or disincentives or penalty if you do have a coal mine disaster.

Mr. DIBONA. Yes, but the penalties for coal mine disasters are not in the Tax Code. They are outside the Tax Code.

Senator ROCKEFELLER. Okay. That is a fair point.

Mr. DIBONA. What we are saying is that this is the way this ought to be handled too.

Senator ROCKEFELLER. So what would you suggest be done?

Mr. DIBONA. Well, first, we are doing something.

Senator ROCKEFELLER. No, I am talking in the law. Do you think that the law should reflect nothing as a result of the experience that we have been through in this country? There should be no change.

Mr. DIBONA. Well, I did not say that.

Senator ROCKEFELLER. Well, what changes do you think there should be?

Mr. DIBONA. Well, there are a number of things that should be done. One, it does make sense to pass a law like 1066, with some modifications. That is, an Oil Spill Liability and Compensation Act. There is no question. We have advocated that for a number of years.

Two, outside of the law, there are steps that we in the industry think we should take and we are committing a quarter of a billion dollars to do that over the next 5 years. It will include the establishment of five centers around the United States, which will be prestocked with equipment. We will have 24-hour manning. We will be backed up by a number of other staging points to which we can move equipment very, very quickly. That program also includes a number of steps to try and reduce the probability that there would be another spill, and finally it includes——

Senator ROCKEFELLER. And what would they be? What would those steps be?

Mr. DIBONA. Those steps have to do with the operation of ships. They include such steps as requirements with regard to extra maneuverability, including the use of tugs if the ship does not have certain capabilities. They include the installation of more vessel control systems in U.S. waters. They include steps authorizing the Coast Guard to have further authority with regard to alcohol and drug abuse—access to the driving records, for example.

Senator ROCKEFELLER. Do you have an estimate, Mr. DiBona, of what the cost of the Reid bill would be to the oil companies?

Mr. DIBONA. I do not have that.

Senator ROCKEFELLER. Do you have an approximate figure?

Mr. DIBONA. I do not because one of the problems with the bill is that it is totally uncertain as to whether or not one qualifies for the deduction of any of these costs. The bill is very imprecise about that. It does not describe what willful negligence is.

Senator ROCKEFELLER. And I do not mean to interrupt, but it is a common thing, and it is an expectable thing, that an industry

would come forward after a tragedy of this sort and they would say, we are going to do better and we will put this $100 million aside to do this, that and the other thing as you have just said.

But is it—What you are objecting to, really, is paying more money?

Mr. DiBona. No. What I am objecting to is use of the Tax Code for purposes for which it is not designed and which would create adverse incentives for people to do what you, in fact, want them to do. I think it is a very poor way of dealing with what you perceive to be a very special problem. We have taken steps to try and deal with that problem voluntarily. There are other provisions of the Federal Code that deal with penalties for people who act in negligent ways. This is just a poor way of carrying this out.

I might raise one other question. I mean, you characterize the efforts up in Valdez as pitiful—I think was the word you used.

Senator Rockefeller. Pathetic was the word I used, yes.

Mr. DiBona. Pathetic is the word you used. I have been up there. I have looked at what is going on. It is a tough job, there is no question about it. But there is a massive and major effort underway. There are 9,000 people trying to get this oil cleaned up. It is on the beaches; it is not on the water anymore, and it was not after the first couple of weeks.

There are 700 or 800 vessels employed. The hang up—the pacing item—was landing craft of the kind that were used in World War II because you need to bring people up to these beaches from the shore side not—I mean from the beach side, not from the shore side. They are generally uninhabited, remote locations. But that is being done and every landing craft that was available anyplace was acquired by Exxon.

They cornered the market in boom facilities very, very early on and delivered them by air to the area. This is a tough job to clean up. It is going to be done. And in the end, there will be no lasting environmental damage in that area. So I would not characterize their efforts as anything but conscientious.

Senator Rockefeller. Than what?

Mr. DiBona. I think they are very conscientious. I think what is being done up there is everything that can be done to alleviate the problem as quickly as possible and in as environmentally sound a way as possible. Each of these beaches, they have been sending teams of people—three people, a geologist, a biologist and an archeologist—this particular area has many archeological sites from the days of the land bridge when populations crossed and came down into the lower part of the Americas.

So they go in and they look at those. That constrains the method by which they clean up. Some of these cleanup operations do not remove the last trace of oil because the biologist believed that the methods necessary to do that will be more harmful to the biology in the area than to let the ocean do the last bit of cleanup. So in some of those areas they wash it with cold water.

Senator Rockefeller. Don't you agree that if this country were using methanol, made from natural gas and coal, and had been using it, as opposed to gasoline made from oil, that methanol would have broken up virtually immediately if it were being transported across the waters, that there would be no lasting effect whatsoever.

That is not to the point of this hearing, but it is just an interesting question that I would ask you.

Mr. DIBONA. Well, methanol is a very highly poisonous substance, more poisonous than—more toxic than is crude oil. It is not a persistent oil. That is, it would not turn to a chocolate moose and then carry on down the beach. But it would have probably had a much bigger fish kill. There was no evidence of a fish kill.

Senator ROCKEFELLER. We will argue that one out later. I totally disagree with what you have said on that. It degrades virtually immediately.

Isn't it true that your proposal would have less capability at each of the five centers that you mentioned than what spilled from *Valdez*, and that was only one-fifth of the tanker?

Mr. DIBONA. The design of that would be to handle something very close to the amount that was spilled at *Valdez* and the plan is to be able to stage in equipment from all of the five centers to one point, if that were necessary. So it would, by staging the equipment from several centers, you could bring to bear equipment that would have handled a spill equal to the loss of the whole ship. That is only about one-fifth of the oil left the *Exxon Valdez*.

The other thing that Exxon did exceedingly well is that they were diverting ships in the middle of the night, on the night that it occurred, Good Friday, where ships were being diverted to lighter—the oil off that tanker—and four-fifths of the oil was carried away without getting into the water.

The program that we had developed and announced yesterday has the capability of taking a 250,000 ton tanker and dealing with the total loss of all of the oil from that tanker. That would be, you know, four or five times what happened up in Valdez. Part of that would be evaporated. That is about 40 percent of the oil evaporates very rapidly. So you would be dealing with the remaining 150,000 tons of the 250,000 tons. This facility would be—each of these would handle 30,000 tons. So the five of them together would handle 150,000 tons.

They would have to be staged in. They would not all arrive as quickly as the nearest one would. But that is the plan.

Senator ROCKEFELLER. The coincidence of your plan arriving yesterday—I have not seen it—is interesting to me.

Mr. DIBONA. Coincidence relative to what?

Senator ROCKEFELLER. It is odd that it just—Is it a new plan which you have just produced?

Mr. DIBONA. This thing here we announced yesterday?

Senator ROCKEFELLER. Yes.

Mr. DIBONA. Yes.

Senator ROCKEFELLER. It reminds me——

Mr. DIBONA. Coincidence relative to what?

Senator ROCKEFELLER. Well, just let me say that there will be some bias in what I say, so I declare myself up front. I apologize for that.

I have had a very interesting time over the last 8 years dealing with the Interstate Commerce Commission on something called the Stagger's Act, which may be of monumental disinterest to you. And if it is, you are a very lucky man; because it is to most people. It is not of disinterest to the coal industry.

There was a marvelous phenomenon that the ICC, which is meant to regulate, or it gives support to captive shippers under the Staggers Act of 1980, in which it declined to do so, only would come up with actions—and it was a fascinating thing to observe—either the day before there was a Senate Commerce Committee meeting or the day before there was a House Dingle meeting. The actions would come and then they—you know, there is a sort of idea of well, that is that.

Thus, sometimes the suspicion on the part of at least this Senator that the coincidence was quite marvelous. And I do not mean to denigrate what is in your plan because I have not seen it. I also do not mean to particularly continue this part of the panel unless there is something more that you gentlemen would like to say.

Mr. DIBONA. Well, all I can say is that we started this thing a couple of months ago. They accelerated the completion of it and we gave—the Chairman of the API gave the Chairman of the committee that did this, Alan Murray, 3 months to do it. They went at force draft to get something done and they completed that about a week and a half ago.

This is the first date that we could get those two gentlemen after that—that they were available to go to Washington to release it. And also, it took us—over the week last weekend to publish it. But it had absolutely nothing to do with this hearing. In fact, I am not sure they knew that this hearing was on.

Senator ROCKEFELLER. I have no reason not to accept that, Mr. DiBona.

One final point and one final question I would ask all three of you. Would you support tougher penalties under environmental laws, any of you?

Mr. HUARD. I think the point is, if the current penalties are deemed inadequate, then the appropriate approach is to modify and improve the penalty structure under the statute in question. You know, going through the backdoor——

Senator ROCKEFELLER. But is it your judgment that they are or are not inadequate? Your judgment may be that they are adequate, therefore, you would not support tougher laws under that.

Mr. HUARD. Well, we do not have an opinion whether they are adequate or inadequate. Our testimony was based on the inappropriateness of using the Tax Code to enforce penalties under nontax regulatory statutes.

Senator ROCKEFELLER. Would you be willing to respond within the next week as to whether——

Mr. HUARD. In writing, certainly.

Senator ROCKEFELLER. Yes.

[The following information was subsequently received for the record:]

It is NAM's position that current sanctions and penalties are adequate and need not be increased.

Senator ROCKEFELLER. Mr. Roland?

Mr. ROLAND. Mr. Chairman, my feeling would be that the current sanctions and incentives under the environmental legislation dealing with nonintentional releases or spills, in other words, accidental circumstances are more than adequate. And those dealing

with the intention circumstances, both criminal and civil, I think, are adequate at the present time.

I believe that when we talk about the accidental situation, the way to improve that is to improve the safety performance, to improve the inspections, to improve the performance of the companies themselves. And speaking for the chemical industry, that is how we are addressing this.

Senator ROCKEFELLER. Mr. Huard, if you were to characterize—I characterized in very strong terms the Exxon spill and I indicated that it was the worst oil tragedy ever. How would you characterize it? I am just curious.

Mr. HUARD. I have to tell you, Senator, I am a tax lawyer. I mean, obviously, it is the worst spill in recorded history and the cleanup costs are going to be the most expensive in recorded history, but I am neither an environmental engineer or——

Senator ROCKEFELLER. Neither am I. But we have a right to our views.

Mr. DIBONA. That answer is not correct. It is not the worst spill; it is the fortieth worst.

Mr. HUARD. Is it?

Mr. DIBONA. In terms of the size, yes.

Mr. HUARD. Okay.

Mr. DIBONA. In terms of the number of barrels.

Mr. HUARD. See, that just goes to show you all I know is what I read in the papers, which is a very dangerous thing.

Senator ROCKEFELLER. Where were you, Mr. DiBona, on those previous 39, if they were all worse?

Mr. DIBONA. Well, I mean—you say worse, it is hard to say whether they are worse or not worse.

Senator ROCKEFELLER. I understand. How would you characterize it?

Mr. DIBONA. The biggest single spill was the Campeche spill off—in the Gulf of Mexico. It was an oil platform—a Mexican oil platform—oil came to the San Padre Island. So the oil from that did hit U.S. waters, and that was probably—you know, no one knows because they do not know exactly how much oil went off, but it probably was 30 times this spill.

Senator ROCKEFELLER. Do you think people like myself are kind of overreacting to this?

Mr. DIBONA. I do not think you are well informed about it. That I must say. I do think that you ought to visit the sight and we would love to help arrange that. Because I think if you saw what Exxon was doing you would have a different perception. I mean the people there are working—are really working hard.

Senator ROCKEFELLER. So you would characterize the spill as a tragedy? It is terrible?

Mr. DIBONA. It should not have happened.

Senator ROCKEFELLER. As the fortieth worst tragedy?

Mr. DIBONA. Pardon?

Senator ROCKEFELLER. You would characterize it as the fortieth worst tragedy and that Exxon is doing everything it can to clean things up?

Mr. DIBONA. No. I would certainly say the latter. I do not know that it is the fortieth worst because many of these spills that were

bigger occurred in open water and they did not hit the beach at all. Oil biodegrades quite rapidly in sea water. If it is out in the open ocean and there is a lot of wave energy, you get a break up and most of the oil evaporates and then it biodegrades and it also depends on the nutrients in the water. If there is a lot of phosphorous in the water; it biodegrades more rapidly because the microbes eat it up quicker.

So the number of barrels is not the criterion that you should use. It is what kind of damage has been done. In this particular case, a large number of birds died. They have picked up some 24,000 birds and about 800 otters. There is no evidence of a fish kill and no evidence of any kill of any of the eggs or fingerlings. That side of it—and there has been no evidence of toxic concentrations in the water column there.

So that the lasting affect on the fish are likely to be very small. The first day of salmon fishing in the Sound, they got twice the number of fish relative to last year. That was after the spill. So, you know, one has to try and balance those things. The bird kill was very substantial—birds and sea otters are the most affected by a spill. In some areas there are no otters. So in other spills that have been bigger, there have been no kill of otters.

Senator ROCKEFELLER. I just have to end on this and I do not mean to be—it does occur to me, and I have just—as Governor of West Virginia for 8 years and being at a lot situations like this, that—I remember when we had a mine disaster in West Virginia at Farmington. Endless numbers of people were killed. I am not making a direct comparison. I am making the best comparisons that——

Mr. DIBONA. No one has died.

Senator ROCKEFELLER. I know. I knew you were going to say that and you are correct. That is what I am saying, I am not trying to make an exact comparison.

Mr. DIBONA. Well, one person got in a dumbwaiter and was killed in one of the ships.

Senator ROCKEFELLER. But there is sort of an attitude on some that these things are bound to happen. You know, there is a law of averages.

Mr. DIBONA. Yes.

Senator ROCKEFELLER. And these things are bound to happen and coal mines are—that is a risky business to be in. So everyone once in awhile you are going to have a mine disaster. That has always struck me as perhaps there is some part of that in human nature. On the other hand, it is a fairly callous, to say the least, reaction.

I have the feeling, Mr. DiBona——

Mr. DIBONA. I do not have a callous reaction. I think it is a tragedy.

Senator ROCKEFELLER. I am not—I said it was my observation.

Mr. DIBONA. Yes.

Senator ROCKEFELLER. I was not necessarily referring to you, unless you referred that.

My instinct is that you are trying to get off with the least possible Congressional action and that you are suggesting the most in the way of initiatives and sort of attaching yourself onto this or that part of the Reid bill, but that you really want to sort of back

the Congress off from doing something which would be substantial or strong. And you would say, I expect, that I am quite wrong?

Mr. DiBona. Well, what I would say about it is, you are concerned—and have been concerned—about the cause of these things. This legislation has nothing to do with the cause. If a meteorite struck an oil tanker and it lost its oil, it would be as subject to this bill as if someone in a totally negligent way caused an accident at sea. Those would be treated under this bill in identically the same way. It is just part of the problem.

Senator Rockefeller. Well, that is a very acute point and we will certainly put a watch out for meteorites.

Mr. DiBona. It has to do with whether or not, at some point later in time, after you have expended these monies—I think that all of the members of the API would in fact go ahead and clean up, even if you passed this bill and they would take the risk. But what you would be doing is, you will be penalizing people who have a sense of responsibility about that and it would be people who choose not to do that because they fear the tax consequences who would not be penalized by this bill.

You should understand, it had nothing to do with causes. The only question will be whether a year from, or 2 years after, you have done all of this, whether or not the commandant of the Coast Guard or the EPA Director, or as I read this, an EPA Administrator in Florida decides whether it will certify whether or not you cleaned up adequately.

Senator Rockefeller. If the legislation makes an exception for good faith effort, why are you so worried about it?

Mr. DiBona. Well, it really does not do that. What I am saying is, that among other things, it is very badly worded. It does not define willful negligence. It does not define most of the terms and it leaves much in question who says you have not complied with the law. So you have tremendous uncertainties.

Senator Rockefeller. The idea of exception, in other words, good faith effort, you are saying that you do not object to the concept of good faith effort being in the bill if it were done in a way which was somehow satisfactory to yourself?

Mr. DiBona. I did not say that. What I have been saying all along is this is a lousy place, an inappropriate place to deal with the problem of someone not complying with environmental law. That ought to be in the law that directs the effort, and defines it, and gives some standard for compliance, and defines willful negligence for that particular environmental operation, not in the tax law for which none of those things are clear and precise.

It is just a bad way of going about it. And, in fact, it will discourage among some people the precise kind of activity that you want to encourage. I do not think that makes much sense.

Senator Rockefeller. Approximately, what percentage of the oil that crosses the waters of this globe is spilled?

Mr. DiBona. It is a tiny fraction of a percent.

Senator Rockefeller. Do you have any idea? Could I get that for the record? Is it less than a half of 1 percent?

Mr. DiBona. Yes. I will get you the percentage. I do not happen to remember it. But it is a very small number.

[The information appears in the appendix.]

Senator ROCKEFELLER. And could you also, if we take this back 20 years—and you can just run that on the computer—take this back 20 years and figure out how many for me, how many barrels of oil that is that has been spilled.

Mr. DIBONA. Yes. What I will try and do is, to the extent we have the information, break it down year by year. It may be—there is a large—99 percent of the spills are very small. I mean they are under 1,000 barrels or smaller and those are almost all picked up. They are immediately boomed and skimmed and so there is not damage to them. Most of them are on record and we can give you that.

Do you want just spills from ships?

Senator ROCKEFELLER. Whatever you can give me. However it is that oil is carried across waters of this world.

Mr. DIBONA. Oh, I see. What I mean was, you do not want it from platforms or you do not want natural seeps or anything else, you just want shipboard transported oil?

Senator ROCKEFELLER. Well, you have enticed me to ask for both, in fact.

Mr. DIBONA. Yes. We can only give you approximations of the amount of oil that comes from natural seeps, but it is very substantial.

Senator ROCKEFELLER. Okay.

Mr. DIBONA. Yes. But we can give you what the National Academy has said about that and whatever other figures are available I will provide you, but I am not sure exactly what they have.

Senator ROCKEFELLER. I appreciate that, Mr. DiBona.

Gentlemen, I appreciate your being here and I also apologize for my late entrance. It is not in terribly good form to question people when you have not heard what they said. So I appreciate it very much.

Mr. HUARD. Thank you, Mr. Chairman.

Mr. DIBONA. Thank you, Mr. Chairman.

Mr. ROLAND. Thank you, Mr. Chairman.

Senator ROCKEFELLER. The final panel consists of Pamela Miller of the National Wildlife Federation, who is the Alaskan legislative representative; Mr. Tim Mahoney, Washington representative of the Sierra Club; and Mr. Clifton Curtis, executive director of the Oceanic Society.

Ms. Miller, please proceed.

STATEMENT OF PAMELA A. MILLER, ALASKA LEGISLATIVE REPRESENTATIVE, NATIONAL WILDLIFE FEDERATION, WASHINGTON, DC

Ms. MILLER. Senator Rockefeller, my name is Pamela A. Miller. I am the Alaska legislative representative for the National Wildlife Federation. It is the largest conservation group in the United States, with over 5.8 million members and supporters.

The National Wildlife Federation has had a long standing concern for improving oil spill laws. If there can be any silver lining to the *Exxon Valdez* spill, we hope it is a stronger oil spill liability and compensation law. I speak to you from first hand knowledge of Alaska. As a wildlife biologist in Alaska for 7 years, I studied the

impacts of oil development on the north slope for the U.S. Fish and Wildlife Service and studied birds in the pristine tundra of the Arctic National Wildlife Refuge. I have walked the shores of Prince William Sound, Katmai National Park and Kenai National Park where oil from the tragic *Exxon Valdez* spill continues to this day to wash onto new beaches.

Our need for comprehensive oil spill liability and compensation legislation has become shockingly apparent as the *Exxon Valdez* disaster has unfolded. We need a strengthened Federal Oil Spill Trust Fund so that government can respond more effectively in the future than it has in Price William Sound. Trustees of the natural resources must be able to get to the scene immediately to assess short-term and long-term spill impacts, and not worry that there might not be funds to cover their work. Critical weeks must not be allowed to go by, with biologists sitting in their offices instead of conducting field studies, while millions of migratory birds fly north through the oil, and bald eagles feed on oiled carcasses.

We need comprehensive——

Senator ROCKEFELLER. Why did those biologists have to sit in their offices?

Ms. MILLER. Because some of them were told not to go to the scene.

Senator ROCKEFELLER. By?

Ms. MILLER. By their higher officials.

Senator ROCKEFELLER. And they worked for?

Ms. MILLER. The U.S. Fish and Wildlife Service, primarily, and the Fish and Game Department of Alaska.

Senator ROCKEFELLER. Okay.

Ms. MILLER. And it appears to be a serious problem as far as that the agencies are concerned, that there is not money in their budgets. And that there have been many levels of approval for the biologists to go through to get onto the beaches themselves.

Senator ROCKEFELLER. Thank you.

Ms. MILLER. We need comprehensive oil spill legislation, but we also need strong laws which will make real improvements over the existing laws. We appreciate the efforts of the Administration to end the long-running stalemate between the Senate and the House with their bill offered by Senator Chafee. However, we believe S. 1066 needs significant strengthening to be acceptable, although we do support the Administration's incorporation of the International Protocols.

Senator Mitchell's bill is better than the Administration bill but was crafted before the Exxon spill and has some major omissions. We believe the Mitchell bill needs fewer improvements than the Administration bill to meet the goals of comprehensive oil spill legislation.

We support Senator Reid's bill. S. 771 provides a better mechanism for internalizing the costs of cleanup to industry and to serve as incentive to avoid spills by the industry. As my written statement outlines, we also support higher penalties as part of the comprehensive oil spill liability legislation such as S. 1066.

In light of the committee's jurisdiction, I will focus my discussion on our concerns with the size of the fund and changes needed in the Internal Revenue Code. My written statement, which I will

present for the record, outlines other major concerns with the Administration bill in the areas of the uses of the fund, the level of natural resource damage, assessment and compensation, State preemption provisions, liability limits and defenses and strengthening of penalties.

We believe that the size of the fund should be increased to $1 billion and that certain changes are needed in the Internal Revenue Code. The proposed amendment in S. 1066 to Section 9509 of the Internal Revenue Code currently provides for a $500 million per incident expenditure limitation from the fund. This should be raised to $1 billion. We agree with the provisions in S. 1066 that the President should have the authority to waive this limit and impose a higher one if necessary.

Section 9509 currently limits natural resource damage assessments and claims to $250 million. This limitation should be eliminated. We believe the financing rate should be increased from 1.3 cents a barrel to at least 2 cents a barrel, until the fund reaches the maximum limit. Instead of stopping the tax when the fund reaches $300 million, as under current law, the tax should continue until $1 billion.

I have other provisions which I would like to discuss concerning the TAPS fund and other specific uses of the fund.

Senator ROCKEFELLER. Go ahead for another 2 minutes.

Ms. MILLER. Okay.

We believe that contrary to the provisions in the Administration's bill, the TAPS fund should be transferred to the spill fund, not rebated to the oil companies. This would complete consolidation of other existing funds with the new trust fund. This is important because there is potential for future catastrophic as well as chronic spills along the entire routes travelled by tankers carrying North Slope oil.

In conclusion, we need a strong oil spill liability and compensation law. We need stronger oil spill contingency plans for better prevention and response to spills than is currently required under the National Contingency Plan. And finally, we need to recognize that even with the best contingency plans and liability funds, there are sensitive areas such as the Arctic National Wildlife Refuge where the risks of oil exploration and development are so high that it should not be allowed.

Thank you.

Senator ROCKEFELLER. Thank you, Ms. Miller.

[The prepared statement of Ms. Miller appears in the appendix.]

Senator ROCKEFELLER. Mr. Curtis.

STATEMENT OF CLIFTON E. CURTIS, EXECUTIVE DIRECTOR, THE OCEANIC SOCIETY, WASHINGTON, DC

Mr. CURTIS. Thank you, Senator Rockefeller.

Based on information and analyses surrounding the *Exxon Valdez* spill, it was a catastrophe that did not have to happen. As for the cleanup, I strongly agree with your assessment, that over the past 3 months, the efforts by Exxon have been pathetic.

With respect to this hearing today, the two bills that are the subject of the hearing—S. 771, dealing with tax deductions; and S.

1066, which deal with oil spill liability and compensation—both represent important steps in the right direction. Let me first comment on S. 771.

In the days and weeks following the Alaska spill, one of the concerns my organization and others repeatedly heard was that of outraged citizens who felt that tax deductions should be disallowed. I have attached to my testimony a Christian Science Monitor cartoon that I think aptly captures that sentiment.

I would like to make four comments with respect to Senator Reid's bill. First, ideally, we do not think there should be any linkage to the adequacy of cleanup. If a spill occurs, we feel that the spiller should not be able to deduct post-spill expenses. It would foster, as you suggested by some of your questions, stronger preventive measures by industry.

Senator ROCKEFELLER. Can I interrupt, Mr. Curtis? Tell me why it is that you do not consider spill cleanups should be treated as a cost of doing business. I happen to agree with you. But why do you feel that it is just not a normal cost of doing business?

Mr. CURTIS. One of the costs of being in the oil business is the responsibility to clean up and take care of spills if they occur. To be able to deduct that from the taxes mean that the taxpayer generally is subsidizing the business expenses of industry. I think that the carriage of oil, the production and transport of oil, is an extremely profitable business and that those risks should be internalized within the industry and not passed on to the taxpayer.

Senator ROCKEFELLER. Expenses which might be legitimately deducted by oil or carriers might be what kinds of things?

Mr. CURTIS. I think preventive expenses, such as building a double hold tanker, adding additional radar equipment on board, those kinds of expenses, some of which may be capital, but others which could be improving existing facilities that would fall in the category of business expenses.

Senator ROCKEFELLER. Do they get to write off training of their captains and others as business discounts, do you know? I just do not know.

Mr. CURTIS. I do not know the answer to that.

Senator ROCKEFELLER. Okay. I am sorry. I did not mean to interrupt your testimony.

Mr. CURTIS. That is fine.

A second point, we do recognize that there may be accidental spills, including the meteorite situation, where the denial of deductions might be viewed as an unfair penalty. However, in order to limit deductions to truly accidental spills, we would ask the committee to strike the word "willful" before the word "negligence" in that subsection of Senator Reid's bill, so that it really only applies to the simple negligence being the standard which if they do not meet that they would be precluded from the deduction.

Third, in the event that denial of deductions are tied to the finding that cleanup was inadequate, we think that oil spills and hazardous substance discharges should be treated similarly with respect to State statutes. State Statutes should be applicable for oil spills as well as hazardous substance discharges.

And fourth, we strongly support the bill's language——

Senator ROCKEFELLER. Could I interrupt again—and I apologize for the bad form.

Mr. CURTIS. Sure.

Senator ROCKEFELLER. Why do you think they opposed—the previous panel would favor being able to preempt State statutes? Do you understand what I mean?

Mr. CURTIS. Well, the argument I have heard from them is the equivalent of double taxation, that they are being forced to pay twice for the same program at the Federal and at the State level. My response to that, in part, is that especially in dealing with smaller spills, States are in a position to address those more effectively than might well be the Federal Government and they need to have those types of funds to do that.

Senator ROCKEFELLER. Excuse me.

Mr. CURTIS. Okay.

Finally, with respect to Senator Reid's bill, we strongly support the language which makes it effective after March 23, 1989. It would then be applicable to the *Exxon Valdez* spill and it should be.

Let me now turn to oil spill liability and compensation. In the view of my organization, a mix of national, state, and international programmatic components are needed to provide a comprehensive oil spill liability and compensation regime. These include a comprehensive national law, retention of State liability laws and U.S. ratification of the 1984 Protocols.

Senator Rockefeller, since the focus of this hearing is on the Tax Code, though, I will just turn to the points that are pertinent to that. In pages 6 and 7 of my testimony I list 11 issues where we think changes need to be made to the Tax Code.

First, the tax rate. We think it should be increased from 1.3 cents a barrel to 2 cents.

Second, the sunset date. As indicated in the Administration's bill, that 1992 date was a date that may have been appropriate when the law was first passed in 1986 but we think that now needs to be moved further into the future, such as 1995.

Third, as with the Administration's testimony today, the reference in the Tax Code to qualified authorizing legislation is an historical artifact. It references a bill that none of the current bills are similar to. There should just be a general reference in the Tax Code to the fact that it would apply to any comprehensive oil spill liability law that is enacted.

Fourth, we think the tax should continue up to $1 billion; it should not shut off at $300 million as is proposed in the Administration bill and it should be available to make sure that you have a fully adequate fund.

Fifth, I agree with the comment by Ms. Miller of NWF that TAPA money should be transferred to the fund.

Sixth, we believe that payments to governments should not arbitrarily be limited to only removal costs and natural resource damage assessments and claims.

Seventh, we think that there should be an increase in the per incident amount to $1 billion. In that regard, we disagree with the Administration's position as stated in S. 1066 that the domestic fund should be used in combination with the international fund.

We think the $1 billion available under the domestic fund should be on top of any monies available under the 1984 Protocols.

Eighth, as Ms. Miller indicated, we believe there should be a special waiver of the per incident cap for incidents where the President believes that is necessary to meet our obligations under international law. And I address that in more detail in my written statement.

Ninth, we do not think there should be an arbitrary ceiling on natural resource damages in the Tax Code. It is currently $250 million. Process the claims as they come in and if they need to deal with them on a prorata basis, they will deal with them, but to arbitrarily cut off damage claims for natural resources is wrong.

And ten, we think that the borrowing authority, paralleling a $1 billion fund should be available up to that level. If you deplete the fund, you need to have ready access to a source of money to replenish it.

And finally, to return in a sense to your earlier question, we do not believe State trust funds should be preempted. We think that States should be allowed to maintain or create such funds from whatever source and for whatever purpose they deem appropriate.

Senator, that concludes my prepared testimony.

Senator ROCKEFELLER. Thank you, Mr. Curtis.

[The prepared statement of Mr. Curtis appears in the appendix.]

Senator ROCKEFELLER. Mr. Mahoney.

STATEMENT OF TIM MAHONEY, WASHINGTON REPRESENTATIVE, SIERRA CLUB, WASHINGTON, DC

Mr. MAHONEY. Thank you, Mr. Chairman. I am Tim Mahoney, Washington representative of the Sierra Club. I am not a tax expert. My testimony reflects that. We are talking in broad themes here.

We are experts at evaluating the environmental damage of oil production development and transportation, we believe. I was reminded of the Federal response to the Yellowstone fires last summer. There was no money appropriated in the budget last year to fight fires, or there was a very tiny bit. But we did not say that the timber companies that had started the fire, or the local West Yellowstone Fire Department should take the lead in fighting fires. We sent in Federal help. We took over a Federal coordinated operation.

That is not how we responded to the *Exxon Valdez*. And to listen to Admiral Yost, we principally said, Exxon has the ability to write checks, we do not; we have not enough money to even keep the cleanup operation afloat for a few days; therefore, let us let Exxon take the lead. Having allowed Exxon to take the lead in the cleanup and the restoration of nature, we are now going to hear Exxon's version of how successful that cleanup has been. And Exxon does not respond to the American people.

Senator Gorton probably was representing the opinions of many Americans when he asked the Chairman of Exxon to resign; and, of course, the shareholders of Exxon did not see it that way at all and gave him an overwhelming vote of confidence at the last shareholders meeting.

Now Mr. DiBona is a very good spokesman for the industry. But we have been listening to reassurances from this industry now for years. And particularly under the Reagan Administration, we have been making public policy based on the industry's assurances of its environmental compliance. This was not the first spill. Mr. DiBona said this might have been the fortieth biggest spill. Well, it was not even the first spill in Valdez this year; it was the third.

And probably, if you looked at the entire Alaskan production transportation system, from Prudhoe Bay to the West Coast ports and the Panama Canal, maybe it was the 16,000th spill since we began operations. Now most of these, of course, are tiny. But it becomes very difficult to bring the pollution record to the attention of the Congress in Alaska when the oil industry has such an effective public relations machine. It is tragic that it takes a tragedy of such magnitude so that the public relations sheen is wiped away and no one can deny the size and scope of that tragedy.

I guess one last thought about this is, for years we have heard in debates of the Arctic Wildlife Refuge or off shore oil operations that the operations in Alaska are state-of-the-art.

Not only did it turn out that the contingency plans were not adequate, the personnel were not on board, the amount of equipment was not capable of handling this spill, people had taken off for Easter, but I do not think it escaped many Americans notice that we wound up having to rely on Soviet technology—Soviet cleanup vessels, Norwegian technology —our state-of-the-art was pretty flabby. Other countries with oil operations and arctic lands and arctic waters were far ahead of us despite the effect of the public relations sell.

On the day of the spill, Mr. DiBona, being such a good advocate for the oil industry, not only discussed the industry's safety and environmental record, he pilloried those who would doubt it. He used it as "proof" that the Arctic Wildlife Refuge should be entered because the use of the Alaska system for 16 years, without a tragedy, was proof that the oil industry should be expanded in Alaska. And the reaction a few days later was, it was only one big spill in 16 years and you will see that is a small percentage of oil as far as how much gets transported, but it covers a lot of beach.

The Sierra Club believes that we should have a strong national oil spill liability law, and that like other pollution laws, it should allow States to put into effect even tougher restrictions or penalties where necessary. Philosophically, we believe that the polluter should pay.

We know that there has to be a balance reached in these laws between the best restoration and restitution possible, as well as the penalties on the other hand that should go to the parties that have polluted the environment and have committed the crimes against the environment.

Nevertheless, those punishments must be proportional to the crime and they must be of significant magnitude so that these gigantic corporations have some deterrent value. I could not believe some of the testimony I heard earlier objecting to the use of the Tax Code for things other than raising Federal revenues. Some of these witnesses come from the same organizations that have been telling us for the last 8 years that it is tax incentives that should

drive public policy. It is private initiatives through tax policy that should be a substitute for Federal spending. That we should not use the Federal Government. We should not invent new Federal programs, but we should use the tax policies to change.

Well, I believe that the Reid bill is using the Tax Code as an incentive to avoid oil spills, as a deterrent against oil spills. It may need fine tuning, but I do not believe there is anything wrong with that philosophy. And perhaps the oil spill liability fund needs to exist for those instances where it is simply beyond the financial capability of the polluter to clean up.

We also believe that if the American people understood how U.S. law and U.S. regulations treat the value of nature ecosystems and animals, they would be appalled. We believe that we are probably underestimating the costs of the Prince William Sound spill because we do not estimate the costs of what a sea otter is worth or what a seal is worth, because they do not have a commercial value. In fact, sea otters and seals eat fish, maybe they have a negative commercial value compared to a salmon.

But the American people, having watched the deaths of sea otters and seals and eagles that eat fish would be appalled to know how valueless they are found by the Federal Government and how little Exxon, or any other oil company, will have to do to clean up and to pay up. We need to make our laws reflect our values and use more creative ways to value natural ecosystems than just commercial losses.

I agree with virtually everything my colleagues have said about the details of the legislation and we would be happy to provide additional details. I would be happy to aspire philosophically over some of the ground that we have aspired already.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Mahoney appears in the appendix.]

Senator ROCKEFELLER. Thank you very much, Mr. Mahoney.

Do you three witnesses consider yourself informed as to the efforts of Exxon and the cleanup up there? I am, evidently, not. But do you consider yourselves informed?

Ms. MILLER. I believe I am as informed as I can be in Washington, DC with the coverage by the news media having significant declined after the initial couple of weeks. I am in contact with our representatives in Alaska almost daily and receive the Department of Environmental Conservation reports on the oil spill every day.

Senator ROCKEFELLER. Have either of you gentlemen been there?

Mr. CURTIS. I went up in mid-April and did some overflights with the commandant of the Coast Guard and the head of NOAA, and was able to see what was happening and what was not happening. I think in a relative sense, reasonably informed.

Mr. MAHONEY. I have not been there since the spill, but I have talked to many people in government and Sierra Club members and conservationists who have been there and heard their descriptions. I think what I——

Senator ROCKEFELLER. You are not going to my question. I mean, I would like to have——

Mr. MAHONEY. I believe I am well informed.

Senator ROCKEFELLER. I would like to have from you your views of the adequacy or inadequacy of Exxon's efforts to clean up up there and/or the government's efforts; and also why was it that we were, if you so conclude as a government, we were so totally unprepared for this.

Just as you choose to respond to that.

Mr. CURTIS. Senator, in my oral statement I indicated over the last 90 days that your assessment was correct, that it has been pathetic. I used the phrase "Keystone Cops" myself on a number of occasions to describe the effort.

I think at times there has been an appropriate moving forward by Exxon. But I think in the early days, and I think in looking at the alternatives for clean up that they have really not brought in the kind of expertise and resources that they should have.

I think for the Federal Government, we saw a situation that needs to be corrected in the law. There is this concern about Federalizing a spill because it would have shut off Exxon's checkbook and the Federal Government on its own had only about $3 million in the 311 case fund of the Clean Water Act. So, God forbid that they should federalize because they would not have the money. We need to make sure that that never happens again, that there is a source of money so that the Coast Guard can step in where it feels that the cleanup is not being done adequately.

Senator ROCKEFELLER. Could the Federal Government have gone ahead and spent the money and then come back at it through emergency appropriations, such as we are now doing in any event?

Ms. MILLER. As it is, the Federal Government is doing that from my understanding. The State government of Alaska has definitely done that. They were much more willing to get biologists out on the scene right away, not knowing whether they would be paid back for it. Whereas, the Federal Government was more reluctant to get people out there before they had money from Exxon. They took a very long time in designating their trustee. That whole process has been very cumbersome and it is hard to identify how much of that is normal bureaucratic functions because of the way the system is set up and how much of it was intentional delay so that we would not really know how many birds were lost from this spill.

I guess in terms of the—I can speak more to the reaction of the government, the industry and so on, with respect to assessing the damages. Looking at both the short-term and immediate mortality studies and impact work, and the long-term studies there has been a problem with the coordination among the government agencies and within specific agencies to get their people out there to do the studies. It is a hard but crucial project, you might say, to cover 800 miles of beaches, to do adequate studies and it costs millions of dollars to get people into these remote parts of Alaska.

One problem with Exxon still being in charge in this spill is that they may be spending more money to do studies and long-term monitoring than the Coast Guard might have. And as long as Exxon is in charge of it, they may have restrictions on their contractors and influence the results of the studies. I think if we had a good oil spill trust fund that could authorize the trustees to spend money to assess natural resources damages—both short-term and

long-term—that the bias in the studies would be less in the long run. I think that is quite important.

Senator ROCKEFELLER. Is the concept of an oil company that makes the spill being responsible for cleaning it up, as opposed to the government, if the oil company has the money to do so—if you can thread my question. In other words, is it better that Exxon—if they had the will to clean up as effectively as they should have and did obviously have the money to clean up—is it better that they do it by themselves to the exclusion of the Federal Government?

I found your point, Mr. Mahoney, very interesting—Yellowstone versus this. I mean that is a very thought-filled philosophically very interesting point.

Or do you get the government and Exxon joining in or is there any kind of philosophical approach to how that is done?

Mr. CURTIS. My response to that is that the Federal Government should oversee it. Spill by spill you may have different companies involved, whether Salls Brothers off of the coast of the State of Washington in December, the spill they had; here it was Exxon in March. The Coast Guard under the Clean Water Act has some long standing experience in developing spill response methodologies in looking at the decision tree, if you will.

A part of that is industry aggressively going after the spill. But I think the Coast Guard experience should be brought to bear on these spills. They should direct those efforts.

Mr. MAHONEY. I agree. I think the question is not so much who cleans it up, but who directs the cleanup. And so long as the Federal Government is not in charge of the cleanup, whether we are putting Federal monies in that we may want to get reimbursed later from the oil company, or whether we are directing the oil company as to what actions to take to clean up the spill, might be a tactical decision that the Coast Guard might need to take at that point.

But if we are not in charge of the cleanup, we are not in charge of the truth about the cleanup. We are going to be arguing for years over the extent of damage and hearing claims about how it sure turned out to be a lot less problem than we thought because we negotiated with Exxon. We turned over our responsibilities, responsibilities of the people who own the water, who own the animals, who own the ecosystem, over to the company that had its first responsibility to its shareholders.

Senator ROCKEFELLER. Are there any more comments that any of you would wish to make about this?

Mr. MAHONEY. Mr. Chairman, I had one. Another analogy.

If we systematically reduced inspections on airplanes, regulations on the maintenance of airplanes, regulations on the number of airplanes, the traffic control of airplanes and we got more air crashes as a result, would we sit there and say that no one wants an air crash; therefore, we do not need to tighten regulations? Would we say that air crashes are an act of God and we cannot do much about them? Certainly United Airlines does not want its planes to crash.

The market drives companies to reduce their costs to increase their profits. I believe you will find out in much less flashy ways than we have seen so far in the coverage of this spill, that when some of the investigations continue—and I am thinking particular-

ly of subcommittee chairman, George Miller's investigation in the House, that you will see that the assurances of tanker safety, of personnel, of contingency plans in Alaska, that were given to the Congress, were never carried out, or were carried out for a short period of time and then systematically weakened for economic decisions; when oil price goes down, personnel are laid off, a systematic weakening of State laws, Federal laws, less Federal regulations, smaller Federal presence.

So that if anything oil spills become more inevitable over time. In many ways we, representing the people in the Federal Government's side of it, bear some responsibility for allowing that to happen. This is not going to be the last oil spill, but the oil spills will continue with greater frequency if we do not take the stronger actions necessary.

Senator ROCKEFELLER. It is quite off the subject, but nevertheless of interest to me, do you agreement with Mr. DiBona when he said that methanol—what we are talking about is foreseeable future is methanol made from natural gas—is, I think he used the word "more poisonous" than oil?

Mr. MAHONEY. I am not a chemist. I do not think we would be transporting much of it over the water. So I gather that the circumstances would be very different.

Senator ROCKEFELLER. Well, we would be transporting it. I mean there would be some natural gas that would be coming from other places, as well as Alaskan flared, that kind of thing. You do not choose to——

Mr. MAHONEY. I do not know the answer.

Senator ROCKEFELLER. Yes.

Mr. CURTIS. I do not have a comment on that but I would like to take advantage of your earlier comment, if there was anything further.

Senator ROCKEFELLER. Okay.

Mr. CURTIS. One, a clarification. I am not a tax lawyer. I may have misspoke earlier in suggesting that the purchase of some new double bottom tanker was a "ordinary business expense" that might be deductible. That may well not be the case in terms of purchase of capital equipment. But perhaps your suggestion of training courses, improvement of existing facilities, of better maintenance, I think are legitimate examples.

More broadly, though, I was concerned about—in relation to Senator Reid's bill, for example, the industry panel saying, "It's bad policy." Well, as Mr. Mahoney indicated, I think it is good tax policy and it is also just one arrow in the quiver. There is also the environmental laws that need to be strengthened. There are the criminal and civil penalties that need to be strengthened. And in each of these areas, they can compliment each other and provide for an overall package.

I think what we saw with the *Exxon Valdez* spill is a strong reservoir of public concern and support for protecting the environment. We, a number of groups in the environmental community, funded an opinion poll done this Spring that really says that in spades, that 80 to 90 percent of the public are willing to go that extra mile financially to protect our natural resources, including areas like Prince William Sound.

Ms. MILLER. I would just like to add a few more comments about the *Valdez* spill and its implications for the long term. I would disagree with Mr. DiBona that the impacts in the long run may not be as bad as we have expected and that, perhaps the press is overreacting. I think if anything, we may be underestimating the impacts of the spill because many of the areas that have been affected by it are virtually unknown in terms of their wildlife resources and how the ecosystem functions.

There hasn't been much Federal money spent in these areas to do baseline research in the new national parks, in the national forests and in the marine waters.

I think we need to do good long-term studies so that we know what these impacts are. Now there are fish that are moving through those waters and scientists are still assessing impacts on them. They are adult fish. But do not have the information on what will happen with the next generation of fish which are likely to be the most vulnerable ones from this spill. It may take 7 years or more to find that out.

Under the liability legislation which has been addressed at this hearing, the effects on those fish 7 years hence might not be covered by the natural resource damages as the bill is written.

I urge the Senate to press for measures which will look at the long-term damages from the *Valdez* spill, as well as other major spills which have occurred just in the last few months on our coasts and to push for strengthening of the existing provisions of the Clean Water Act, the Clean Air Act and other environmental laws.

Thank you.

Mr. MAHONEY. Mr. Chairman, may we respond in writing about your methanol question?

Senator ROCKEFELLER. Of course.

Mr. MAHONEY. Thank you.

Senator ROCKEFELLER. I wish you would.

Mr. MAHONEY. I will.

Senator ROCKEFELLER. I thank all of you very, very much. I thank you for your patience and with that I guess this hearing is adjourned.

[Whereupon, the hearing was adjourned at 12:35 p.m.]

APPENDIX

ALPHABETICAL LISTING AND MATERIAL SUBMITTED

PREPARED STATEMENT OF SENATOR LLOYD BENTSEN

On March 24 of this year, the oil tanker *Exxon Valdez* ran aground on the Bligh Reef, spilling over 250,000 barrels of oil into Prince William Sound. The entire nation has been appalled by this disaster and the pictures we've all seen of beaches and wildlife in the Alaska wilderness covered with oil.

The *Exxon Valdez* spill was the largest ever in U.S. waters. It has refocused public attention on the hazards of oil shipping to the environment and has raised questions about our ability to prevent and respond to catastrophic oil spills.

Today, we will hear testimony on two legislative proposals that are a response to this disturbing episode. S. 771, introduced by Senator Reid, would disallow a tax deduction for oil spill cleanup costs unless the taxpayer make a good faith effort to comply with Federal cleanup standards. S. 1066, introduced by Senator Chafee on behalf of the Administration, would impose a 1.3 cents per barrel tax on oil and imported petroleum products to finance a trust fund to pay for oil spill cleanups. While S. 1066 is principally within the jurisdiction of the Environment and Public Works Committee, the Finance Committee would be responsible for the tax title of the bill.

To day we'll be taking a close look at these bills. We'll be trying to find answers to some important questions, such as: Do these proposals represent a prudent, effective tool to prevent or ameliorate oil spills: Are the resources that the administration is proposing to raise for the oil spill trust fund adequate to respond to a major accident of the magnitude of the *Exxon Valdez* incident? Is the tax code an effective instrument to promote responsible actions by persons handling hazardous substances or would other means be more effective and efficient?

We have a distinguished panel to shed some light on these issues and to provide us with some guidance on what, if any, action Congress and this Committee should take. We will hear from officials from the Treasury and Transportation Departments, from industry representatives, and from environmental organizations.

Attachment.

DESCRIPTION OF TAX BILLS RELATING TO TAX FOR OIL SPILL LIABILITY TRUST FUND (S. 1066) AND DEDUCTION FOR OIL SPILL CLEANUP COSTS (S. 771)

[Prepared by the Staff of the Joint Committee on Taxation, June 19, 1989, JCX-24-89]

INTRODUCTION

The Senate Committee on Finance has scheduled a public hearing on June 21, 1989, on bills relating to (1) the petroleum tax for the Oil Spill Liability Trust Fund (S. 1066, introduced by Senator Chafee); and (2) the deductibility of oil spill cleanup costs (S. 771, introduced by Senator Reid).

This document,[1] prepared by the staff of the Joint Committee on Taxation, provides a description of present law and of the bills.

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[1] This document may be cited as follows: Joint Committee on Taxation, Description of Tax Bills Relating to Tax for Oil Spill Liability Trust Fund (S. 1066) and Deduction for Oil Spill Cleanup Costs (S. 771) (JCX-24-89), June 19, 1989.

TAX FOR OIL SPILL LIABILITY TRUST FUND (S. 1066); DEDUCTION FOR OIL SPILL CLEANUP COSTS (S. 771)

Present Law

Oil Spill Liability Trust Fund Petroleum Tax

Present law (Code sec. 4611) establishes an excise tax of 1.3 cents per barrel on domestic crude oil and imported petroleum products (including imported crude oil) for the purpose of funding the Oil Spill Liability Trust Fund. However, the tax will not be imposed until qualified authorizing legislation [2] is enacted. Although the tax itself was enacted in 1986, qualified authorizing legislation has never been enacted. Consequently, this tax has never been collected. This tax expires on December 31, 1991.

The tax on domestic crude oil would be imposed on the operator of any United States refinery receiving such crude oil, while the tax on imported petroleum products would be imposed on the person entering the product into the United States for consumption, use, or warehousing. If domestic crude oil is used in, or exported from, the United States before imposition of the petroleum tax, the tax would be imposed on the user or exporter of the oil. The tax base would be the same as for the Superfund excise tax on crude oil and imported petroleum.

Trust fund expenditure purposes would include payment of removal costs of an oil spill and certain otherwise uncompensated claims. In addition, funds would be available to carry out specific provisions of other legislation relating to oil discharges and pollution. Trust fund amounts also would be available to pay all Federal Government administrative costs and contributions to the International Fund under the Comprehensive Oil Pollution Liability and Compensation Act.

The Oil Spill Liability Trust Fund excise tax is scheduled to expire on December 31, 1991. The tax will terminate earlier than that date if the Secretary of the Treasury estimates that $300 million or more will be credited to the Oil Spill Liability Trust Fund before January 1, 1992.

Treatment of costs incurred in connection with the cleanup of oil and hazardous substances

Present law permits taxpayers to deduct the ordinary and necessary expenses of carrying on a trade or business. Thus, taxpayers who must clean up oil or hazardous substances may generally deduct the expenses of the cleanup. Present law does not require that the cleanup be done in accordance with the requirements of Federal environmental laws for the expenses to be deductible.

Present law does restrict taxpayers' ability to deduct certain specific types of payments. These restrictions were enacted because the expenditures are considered to violate public policy. For example, no deduction is permitted with respect to illegal bribes, kickbacks, fines, penalties, or treble damage payments under the antitrust laws. Thus, a fine or penalty imposed by a governmental unit because of the discharge of oil or hazardous substances is not deductible under present law.

Description of the Bills

S. 1066 (Senator Chafee): [3] Comprehensive Oil Pollution Liability and Compensation Act of 1989

The bill would establish a domestic liability and compensation system for oil pollution from vessels and facilities (Title I of the bill). The bill also provides for the implementation of certain international conventions relating to oil pollution (Title III of the bill).

Section 207 of the bill contains the tax-related provisions. The bill provides that collection of the Oil Spill Liability Trust Fund tax would commence with the first calendar month beginning more than 30 days after enactment of the bill. The bill would also amend the present-law Oil Spill Liability Trust Fund tax by extending the expiration date of the tax from December 31, 1991, to June 30, 1994. As under present law, the tax would terminate earlier than that date if the Secretary of the Treasury determines that the amount of taxes to be collected would exceed $300 million.

The bill would modify the limitations on expenditures from the Oil Spill Liability Trust Fund to permit the President to waive the present-law expenditure limit of

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[2] The Code requires that the authorizing legislation be substantially identical to subtitle E of title VI, or subtitle D of title VIII, of H.R. 5300 of the 99th Congress as passed the House of Representatives.

[3] This bill was introduced at the request of the Administration.

$500 million per incident. The bill also would remove the present-law expenditure limit of $250 million on payments for natural resource damages. Finally, the bill would provide that the Trust Fund may only be used as authorized under the bill.

Effective date.—Imposition of the tax would commence on the first day of the first month beginning more than 30 days after the date of enactment.

S. 771 (Senator Reid): Oil Spill Bill

In general, the bill would deny a deduction for expenses incurred by a taxpayer which result from the cleanup of oil or hazardous substances discharged by that person. In addition to the direct costs of cleanup, non-deductible expenses would include legal fees resulting from the discharge of oil or a hazardous substance; payments or restitution related to discharge of oil or a hazardous substance; and any costs required by Federal law or regulation.

The disallowance of these expenses would not apply in cases in which either the Administrator of the Environmental Protection Agency or the Commandant of the Coast Guard (whoever is appropriate) certifies that the taxpayer made a good faith effort to comply with applicable Federal laws and regulations relating to the clean up of the oil or hazardous substances. In addition, the disallowance of these expenses would not apply in specified circumstances that are beyond the control of the taxpayer.

The taxpayer would be required to itemize separately the cleanup expenses. The Secretary of the Treasury is to estimate the revenue gained by the disallowance of the expenses. The Secretary is required to transfer from the general fund to a separate account an amount equal to this revenue gain. These amounts may be expended only in relationship to the cleanup of oil or hazardous substances.

The bill would require the Secretary to submit to the House Committee on Ways and Means and to the Senate Committee on Finance an estimate of the loss in revenues to the Federal Treasury which occurred between January 1, 1970 and December 31, 1988 by reason of permitting cleanup costs to be deducted from gross income. This report would be required to be furnished not later than six months after the date of enactment. After submitting this report, the Secretary would be required to submit an annual report detailing the amount accruing to the Treasury as a result of the bill and the amount expended for environmental cleanup.

Effective date.—The bill would be effective for all discharges occurring after March 23, 1989, in taxable years ending after that date.

PREPARED STATEMENT OF JOSEPH F. CANNY

Mr. Chairman and members of the committee: I appreciate this opportunity to present the views of the Department of Transportation regarding S. 1066 and S. 771. Secretary of Transportation Skinner has stated that passage of comprehensive oil pollution liability and compensation legislation is a top priority for the Administration. Consequently, we very much appreciate the action of your Committee in scheduling an early hearing focusing on the financing aspects of the proposed legislation.

S. 1066 incorporates the Administration's proposals. It would establish a system of liability and financial responsibility for vessels and facilities involved in the handling of crude oil and oil products. Sigh liability limits would be established for the responsible parties to assure clean up and damage costs are borne by the spiller. The supplemental fund financed by a fee assessed against oil produced or imported into the United States would cover any clean up and natural resources restoration costs in excess of the liability limits of the responsible party. In the vast majority of cases—more than 95% of all spills based on experience over the past 15 years—clean up and damage costs would be totally compensated within the spiller's limits of liability. The fund would only be used in those rare, catastrophic spills where exceptional costs are incurred.

Another important feature of the Administration's proposal is that it would provide for the implementation of two international Protocols dealing with the same subject. The international Protocols offer important benefits which would not be available under a strictly domestic scheme.

The principal features of the Administration's proposal are summarized in the attached charts. The funding provisions in the Administration's bill are similar to those developed by this Committee and your House of Representatives counterpart in the 1986 Omnibus Budget Reconciliation Act. Mr. Gideon's statement has addressed the key features of the trust fund financing mechanism, as well as the Administration's perspective on S. 771. I do not wish to duplicate any of the points he has made but would be pleased to respond to any questions the Committee may have concerning the Administration's proposal.

Oil Spill Liability Compensation Legislation

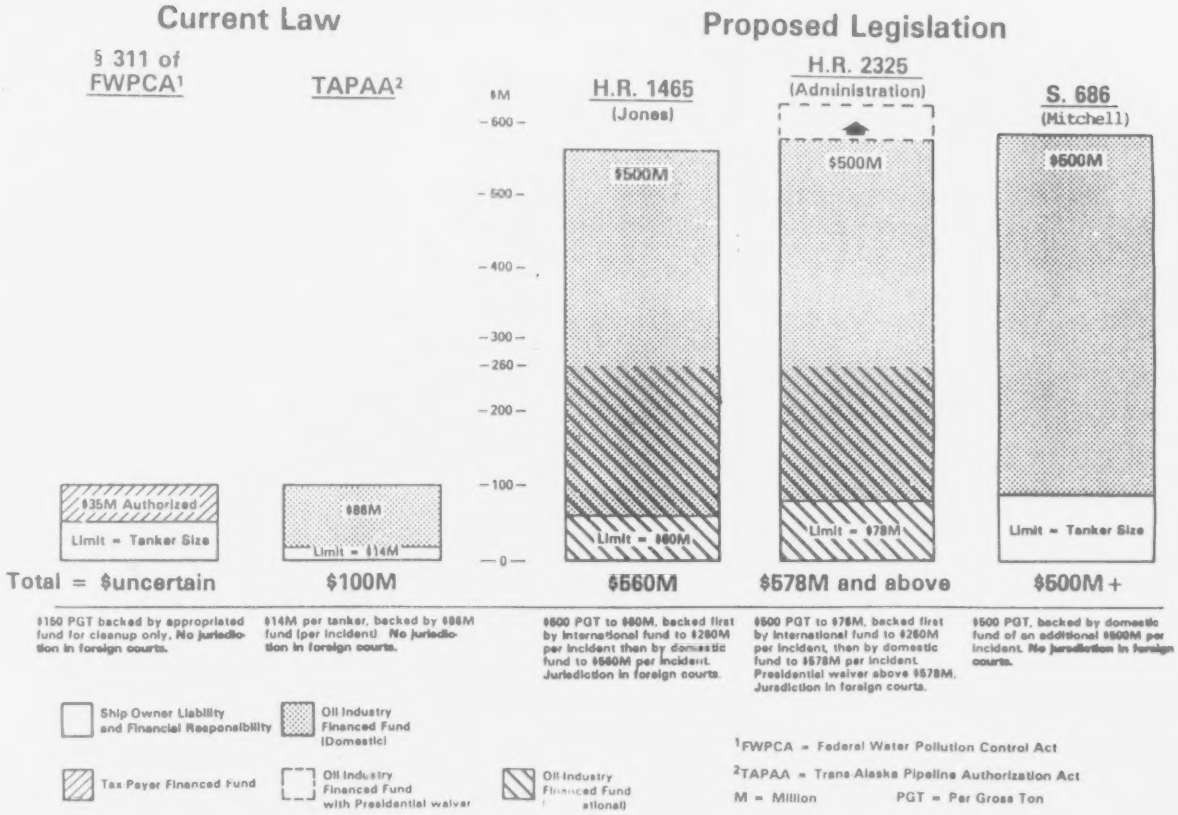
	H.R. 1465 (Jones)	H.R. 2325 (Administration)	S. 686 (Mitchell)
• Limits of Liability			
– Tankers	greater of $500 PGT or $5M (maximum $60M)	greater of $500 PGT or $5M (maximum $78M)	greater of $500 PGT or $10M
– Other Vessels	greater of $300 PGT or $500,000	greater of $300 PGT or $500,000	greater of $300 PGT or $500,000
– Inland Oil Barge	same as other vessels	same as other vessels	same as tankers
– Deepwater Ports	$75M	$75M	$100M
– OCS Facilities	$75M	$75M	cleanup costs pluse $75M
– Other Onshore/ Offshore Facilities	$75M	$75M	$100M
• State Preemption			
– Funds	No	No	No
– Liability, including limits	Yes	Yes (for Protocols only)	No
• Implements Protocols	Yes	Yes	No
• Fund limit (per incident)	$500M	$500M*	$500M
• Extend Internal Revenue Code (1.3¢)	No	Yes	No
• Direct Draw	$100,000	$50,000	$250,000
• TAPAA rebate	Yes	No (fenced)	No

*May be increased (per incident) by the President.
(Cleanup and natural resource damage only – no 3rd party damages)

Note: PGT = per gross ton

Comparison of Compensation For Removal & Restoration Costs

(Sea-Going Tanker Spill)


Current Law
Proposed Legislation
§ 311 of FWPCA[1]
TAPAA[2]
H.R. 1465 (Jones)
H.R. 2325 (Administration)
S. 686 (Mitchell)
$M
600
500
400
300
260
200
100
0
$35M Authorized
Limit = Tanker Size
$86M
Limit = $14M
$500M
Limit = $60M
$500M
Limit = $78M
$500M
Limit = Tanker Size
Total = $uncertain
$100M
$560M
$578M and above
$500M +
$150 PGT backed by appropriated fund for cleanup only. No jurisdiction in foreign courts.
$14M per tanker, backed by $86M fund (per incident). No jurisdiction in foreign courts.
$500 PGT to $60M, backed first by International fund to $260M per incident then by domestic fund to $560M per incident. Jurisdiction in foreign courts.
$500 PGT to $78M, backed first by International fund to $260M per incident, then by domestic fund to $578M per incident. Presidential waiver above $578M. Jurisdiction in foreign courts.
$500 PGT, backed by domestic fund of an additional $500M per incident. No jurisdiction in foreign courts.
Ship Owner Liability and Financial Responsibility
Oil Industry Financed Fund (Domestic)
Tax Payer Financed Fund
Oil Industry Financed Fund with Presidential waiver
Oil Industry Financed Fund (International)
[1]FWPCA = Federal Water Pollution Control Act
[2]TAPAA = Trans Alaska Pipeline Authorization Act
M = Million
PGT = Per Gross Ton

PREPARED STATEMENT OF CLIFTON CURTIS

I am Clifton Curtis, Executive Director of the Oceanic Society, a 30,000 member national non-profit environmental organization dedicated to the protection, conservation and wise use of ocean and coastal resources. Earlier this year, the Oceanic Society merged with Environmental Policy Institute and Friends of the Earth. My testimony today, therefore, is presented on behalf of all three of those groups.

March 24, 1989—12:04 a.m. The date and time when the *Exxon Valdez* first rammed into Bligh Reef in Prince William Sound. As we all know, there are events in history that indelibly sear the public's consciousness. Such events serve as markers in our collective psyche—as signposts in our lives. Some of those events can have a profound impact on the way we think about such things as ourselves, other humans, other species, and the planet's natural ecosystem. The *Exxon Valdez'* spill of nearly 11 million gallons of North Slope Alaskan crude oil is an incident of that caliber.

This view was confirmed in a recent public opinion poll and survey that was done following the *Exxon Valdez* spill.[1] As part of the findings, pollster V. Lance Tarrance noted that:

> There is little doubt now that the *Exxon Valdez* oil tragedy in Alaska will indeed become a "moment in history" that may shape the 1990 election debate—mobilizing voters to feel more intensely about the need to act quickly and decisively to protect not only this country's environment, but perhaps the planet's environment as well.

Based on information and analyses surrounding the *Exxon Valdez* spill, it was a catastrophic tragedy that didn't have to happen. Looking ahead, it challenges us to further minimize the risk of such spills, through preventive measures, and to significantly improve post-spill response capabilities. Towards that end, the two bills that are the subject of this hearing—S. 771, pertaining to tax deductions for clean-up costs; and S. 1066, which addresses oil spill liability and compensation—represent important steps in the right direction.

TAX WRITE-OFFS FOR OIL SPILLS

In the days and weeks following the *Exxon Valdez* spill, one of the concerns voiced by a number of outraged citizens was the fact that Exxon would be able to deduct spill clean-up costs from its Federal taxes as a cost of doing business. "It adds insult to injury," one person said. Another used the proverbial phrase, "rubbing salt in the wound." A number of press/media pieces focused attention on such deductions, as was the case with the Christian Science Monitor cartoon I've attached.

Shortly after the spill, staff from Senator Reid's office invited in a number of us from the environmental community to discuss legislation that they were preparing at the Senator's behest concerning the tax deductions—for oil spills, as well as hazardous substance discharges. From our perspective, the Senator's leadership in pressing forward on this issue has been greatly appreciated.

Ideally, the organizations I represent would prefer legislation which denies tax deductions to spillers for oil or hazardous spill-related expenses without regard to adequacy of clean-up. If a spill occurs, the spiller can't deduct any post-spill expenses. Such an approach would send a message that could foster stronger preventive measures by industry.

We also recognize, though, that there may be accidental spills where the denial of such deductions might be viewed as an unfair penalty. For that reason, we support (with one change) the language included in S. 771 which denies any deduction "where it can be shown that the oil or hazardous substance discharge was the result of willful negligence or willful misconduct" (Sec. 101(a)/IRC Sec. 162(m)(2)). In order to limit potential deductions to truly accidental spills, we ask the Committee to strike the word "willful" prior to the word "negligence" in that subsection.

In addition, in the event that the denial of deductions are tied to a finding that clean-up was inadequate, as provided for in S. 771, we would recommend that such a oil spills and hazardous substance discharges be treated similarly with respect to the applicability of state statutes. The bill does require compliance with "applicable state statutes" in relation to hazardous substance discharges (Sec. 101(a)/IRC Sec. 162(m)(1)(B)), but focuses only on Federal law with respect to oil discharges. That

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[1] *The Rising Tide: Public Opinion, Policy & Politics,* Analyses of polling trends written by Americans for the Environment, Louis Harris, Harris & Associates, V. Lance Tarrance, Tarrance & Associates, and Celinda C. Lake, Greenberg-Lake/The Analysis Group, April 20, 1989.

discrepancy is easily remedied, though, by adding the phrase "or applicable state statutes" before the ending phrase "for oil discharges" in Sec. 101(a)/IRC Sec. 162(m)(1)(A).

As for other provisions, I'd like to briefly mention two. We strongly support the bill's language which states that the Act is "effective for all discharges occurring after March 23, 1989" (Sec. 105). It would then be applicable to the *Exxon Valdez* spill, and it should be. We also support the distribution of lost deductions to oil and hazardous substance trust funds (Sec. 104), given that such monies would offset taxpayer-supported funds. If, as with pending oil spill liability legislation, though, the operative trust fund is industry-generated, we would not want to see those lost deductions commingled with such a fund. In that situation, we would strongly prefer to see the monies used for the acquisition of special parks, sanctuaries or preserves above and beyond such acquisitions that might otherwise be required under any natural resource damage claims associated with the spill or discharge at issue.

OIL SPILL LIABILITY AND COMPENSATION

As some Members of this Committee know, the enactment of programmatic oil spill liability and compensation legislation has a familiar ring to it. Far too familiar. With the exception of the 1986 tax law at issue in this hearing, programmatic bills going back to 1975 have been introduced, hearings and markups held, and floor votes recorded in favor of legislation in either the House or Senate. There's been progress, as the two houses have worked out some of their differences—but differences still remain.

What our nation needs, and does not have, is a package of complementary national, state and international laws that will fully compensate victims of oil spills, including damages to natural resources, other property, and loss of income, while also providing for quick, efficient and effective cleanup and internalizing the spill-related costs among the responsible party and the oil industry. Yet, at present, there exists a fragmented hodge podge of national and state laws providing inadequate cleanup and damage remedies, taxpayer subsidies to cover cleanup costs, damages that go uncompensated, corporate structures designed to limit exposure, and other legal barriers to victim recoveries—such as deadlines for filing claims and burdens of proof that favor the spiller.

A mix of national, state and international programmatic components are needed to provide a comprehensive oil spill liability and compensation regime. Those components are: enactment of a comprehensive national law; retention of state liability laws and programs; and U.S. ratification of the 1984 CLC/Fund Protocols. This regime offers a package approach far superior to the present situation. Each component can complement the others, achieving the "polluter pays" principle in important respects and ensuring full and fair coverage, while also preserving state laws, to the maximum extent possible, yet allowing for U.S. ratification of an international treaty regime that will provide remedies for cleanup and damages in ocean and coastal waters around the globe.

As this Committee knows, at present there are two national programmatic oil spill liability and compensation bills pending in the Senate—S. 1066, the Administration's bill as introduced by Sen. Chafee (by request); and S. 686, Sen. Mitchell's bill—and one in the House—H.R. 1465, Rep. Jones' bill which is being marked up by the full Merchant Marine and Fisheries Committee this morning. Of those three bills, the environmental community believes that Sen. Mitchell's bill is by far the best, overall. At the same time, there are a few additional improvements that we'd like to see made to S. 686, including one that is addressed, albeit inadequately, in S. 1066. My three organizations, as well as numerous other national environmental groups, favor U.S. ratification of the 1984 Protocols, as noted above. While S. 686, as introduced, would preclude such ratification, it is our continuing hope and belief that a satisfactory and acceptable solution can be found that would allow for favorable Senate "advice and consent" action on the Protocols while also preserving most, if not all, essential state liability laws and programs.

Mr. Chairman, since the focus of this hearing with respect to oil spill liability and compensation is on the applicable Internal Revenue Code laws, I would like to conclude by highlighting several amendments that my three organizations would like to see enacted. However, given the expedited scheduling of this hearing, I also would appreciate the opportunity to recommend other changes, within the next few days. The following comments are in no particular order of priority:

(1) *Tax Rate.* In order to ensure more rapid filling or replenishment of the Trust Fund, we recommend that the financing rate be increased from 1.3 cents a barrel to at least 2 cents. (Sec. 4611(c)(2)(B));

(2) *Sunset Date.* We recommend that the end date for the application of the Trust Fund financing date be extended from January 1, 1992, to a later year, such as 1995. (Sec. 4611(f)(1));

(3) *Qualified Authorizing Legislation.* The requirement that "qualified authorizing legislation" be "substantially identical" to H.R. 5300 is a historical artifact that needs to be deleted. None of the pending bills is substantially identical to H.R. 5300. Instead, a general reference should be made, after the "December 31, 1990" date, which might read: "which establishes a comprehensive, national oil spill liability and compensation regime." (Sec. 4611(f)(2)(B));

(4) *Continue Tax Up to $1 Billion.* Tax collections should continue as long as the Trust Fund has less than $1 billion in it. Once that level is reached the tax should be suspended, but not terminated, since collections should resume if the Trust Fund is depleted below the $1 billion level. (Sec. 4611(f)(3));

(5) *Transfer TAPAA Monies to Trust Fund.* Subject to payment of claims brought under the Trans-Alaska Pipeline Authorization Act, the TAPAA Fund should be transferred to the Trust Fund established by the IRC, paralleling the transfers of the Deepwater Ports Act Fund and the Outer Continental Shelf Lands Act Fund. (Sec. 9509(b));

(6) *Payments to Governments.* Governments should not be arbitrarily limited to payment only for removal costs and natural resources damage assessments and claims. Rather, their right to payment should parallel the claim rights listed in S. 686, which would include direct or indirect loss of tax, royalty, rental or net profits share revenue. In addition, restoration, acquisition of replacement resources and damages for lost uses also need to be compensated. (Sec. 9509(c)(1)(B));

(7) *Increase Per Incident Amount to $1 Billion.* Given the likely costs associated with clean-up and damages for the *Exxon Valdez*, the $500 million per incident amount should be doubled to $1 billion. (Sec. 9509(c)(2)(A));

(8) *Special Waivers of Per Incident Cap.* Under Section 103(c) of S. 1066, it states that "Notwithstanding any other provision of law, the President is authorized to waive the limit imposed by this subsection and prescribe a higher limit upon a determination that such a waiver is necessary and in the best interests of the country." The purpose of this language is to ensure compensation in those situations where the 1984 CLC Protocols are in effect (limiting spiller liability), and state or Federal law claims exceed the funds otherwise available from international, Federal and state sources. To the extent the Committee believes that this or similar language does not protect adequately the Congress' control over levying of taxes, we stand ready to assist in developing an acceptable alternative provision that would accomplish the same purpose. (Sec. 9509(c)(2)(A));

(9) *Delete Arbitrary Ceiling on Natural Resource Damages.* The law currently limits natural resource damage assessments and claims to $250,000,000, an arbitrary figure that should be stricken. (Sec. 9509(c)(2)(B));

(10) *Borrowing Authority.* In order to increase the likelihood that at least $1 billion is available, even when the Trust Fund has been drawn down to its $30 million minimum, the Trust Fund should be authorized to receive repayable advances up to as much as $1 billion at any one time. (Sec. 9509(d)(2)); and

(11) *No Pre-emption of State Trust Funds.* While no provision of the Internal Revenue Code at issue here precludes states from taxing the oil industry for the creation or maintenance of state-administered oil spill trust funds, industry representatives prefer such pre-emption (as evidenced by Rep. Shumway's May 24, 1989, amendment to H.R. 1465). In my organizations' view, though, states should be allowed to maintain or create such funds, from whatever source and for whatever purpose they deem appropriate. They should be able to make the judgment that protection of their state waters and coastlines is sufficiently crucial to their fishing or tourist industries, or that protection is sufficiently important to them, that it outweighs the risk of reduced business activity or higher prices that might result from the imposition of industry taxes or fees for such a fund.

CONCLUSION

The Oceanic Society, Environmental Policy Institute and Friends of the Earth stand ready to work with your Committee, and other Members, to achieve essential advances in the legal, financial and institutional framework that are needed to both prevent oil spills, and to protect people, real and personal property, and our ocean and coastal resources from their inevitable occurrence. Both of the bills for which you have requested testimony today offer opportunities to contribute to such advances.

Mr. Chairman, this concludes my prepared testimony. I would be glad to answer questions. Thank you.

I'M AN EXXON BOOKKEEPER. TODAY I'M FIGURING OUR DEDUCTIONS.
WE'LL DEDUCT THE COST OF THE CLEAN-UP.
.. AND THE COST OF THE REPAIRS TO THE TANKER.
... AND THE COST OF THE LOST OIL.
AND THEN WE RAISE THE PRICE OF GAS...
WHIRRR. BZZP!
Y'KNOW... THEY CALL THIS A DISASTER.
.. BUT IT LOOKS GOOD TO ME...
DANZIGER
The Christian Science Monitor

PREPARED STATEMENT OF CHARLES J. DIBONA

My name is Charles DiBona. I am President of the American Petroleum Institute. We appreciate the opportunity to testify regarding S. 1066, the Administration's oil spill bill and S. 771, which would deny deductions for costs of cleaning up oil spills and other hazardous substance discharges. In addition to my presentation today, we will be submitting a written statement for the record.

Mr. Chairman, the tragic oil spill in Alaska's Prince William Sound underscores the need to move ahead with programs for spill prevention and response capability, including legislation covering oil spill liability and compensation.

API strongly favors a comprehensive approach necessary to deal immediately with any oil spill in any U.S. navigable waters. We stand ready to provide all the assistance we can to the Congress to achieve this objective.

An API Task Force established to review industry operations in the area of oil spill prevention and response released its report yesterday which offers recommendations for significant industry action in three areas—prevention of spills, response to spills, and spill-related research. We believe the recommendations provide the basis for a meaningful dialogue with government in developing a cooperative approach to the oil spill issue.

We do *not* believe that the negative, punitive use of the Tax Code contemplated in the amended version of S. 771 is a useful or appropriate way to achieve the desirable goal of protecting and preserving our environment and natural resources.

Aside from the many technical flaws of S. 771, which we will detail in our written statement, the more fundamental objection to the bill is that on policy grounds it is simply bad legislation. And, what makes it even worse is that it was made retroactive to target a single company.

First, it would establish a precedent which is bad tax policy. The underlying goal of the corporate income tax is to levy a tax on the profits of business operations. The Tax Code, as a matter of sound tax policy, has for many years recognized that business expenses—even when compelled by unusual and unexpected events—reduce both profits and taxable income.

Second, it sends exactly the wrong message. There are anti-deductibility provisions in the Code wherein, on public policy grounds, specific expenditures are disallowed as deductions in order to discourage such expenditures (paying of bribes, for example). S. 771 turns this concept exactly on its head. This bill discourages the very expenditures which are clearly in the public interest and should be encouraged.

It sends the message that whatever cleanup costs a taxpayer incurs, he runs the risk of having them denied at some future time because he does not or cannot meet standards defined and administered—not in the Tax Code or by the Treasury and the IRS—but determined by the Commandant of the Coast Guard or the Administrator of the EPA.

Third, the Tax Code is not the right place for this purpose. If punishment is the objective of the legislation, the Tax Code is not the proper enforcement device. In those rare instances where willful misconduct or willful negligence establish fault, there already exist numerous specific civil and criminal penalties under Federal and state laws. And penalties imposed under those laws are not deductible for income tax purposes.

Let me turn now to S. 1066, the Administration's proposed legislation. The fundamental premise of oil spill compensation and liability arrangements should be that all legitimate claims must be paid, and all claimants who have incurred actual losses must be compensated to the full extent of those losses. Therefore, API believes comprehensive Federal oil spill liability and compensation legislation should incorporate four fundamental principles:

First, the spiller should be "on the front line," responsible for removal costs and damages directly resulting from the spill, up to the applicable liability limit.

Second, a reasonably sized fund should be created through contributions from companies that handle oil to supplement the cost of removal and compensation for direct damages over and above the liability of the spiller.

Third, all oil spill removal costs, economic losses directly resulting from the discharge and actual costs incurred to restore or replace environmental losses should be compensated.

Fourth, the comprehensive Federal regime should be the only liability system for a discharge of oil into the marine environment.

API is concerned that S. 1066 does not effectively meet these principles, especially the fourth. S. 1066 also outlines provisions to implement the International Civil Liability Convention and Fund Convention and their respective Protocols. These in-

struments, which involve international oil spill liability and compensation arrangements, have not been ratified by the Senate. There are questions as to how these complex arrangements would interface with domestic oil spill law under consideration and the precedence they would have.

The Trust Fund provisions of the Administration's bill would authorize the President to waive the current law expenditure limit of $500 million per incident and to prescribe a higher limit if he determines it is necessary. It also extends the expiration date of the 1.3 cents/barrel rate from January 1, 1992 to July 1, 1994, but leaves in place the $300 million cap on the Fund. API is still actively reviewing S. 1066 and will be prepared to offer more in-depth comments at a later date.

I would conclude, Mr. Chairman, by reemphasizing that the API recognizes that our industry must do its utmost to prevent future oil spills and to respond effectively to them when they do occur. Clearly, it is imperative that we move rapidly to improve our understanding of, and capability to deal with, these tragic accidents. I believe that our Task Force Report and the actions announced yesterday by the industry represent a significant and important step in this direction. Further, we stand ready to assist the Congress and the Administration, in whatever way we can, in your efforts to establish a comprehensive and fair system for dealing with these difficult issues. Mr. Chairman, I thank you for this opportunity to express our views.

Attachment.

STATEMENT OF THE AMERICAN PETROLEUM INSTITUTE

This statement is submitted to the Senate Finance Committee by the American Petroleum Institute (API). The API is a national trade association which represents over 200 companies involved in all aspects of the oil and gas industry including exploration, production, transportation, refining and marketing. The statement accompanies the oral testimony of Charles J. DiBona at a hearing before the Committee on June 21, 1989, regarding S. 1066, introduced by Senator Chafee, and S. 771, introduced by Senator Reid. Unless otherwise noted, the comments below regarding S. 771 refer to that bill as modified by Amendment 116 offered by Senator Reid to the Supplemental Appropriations Bill.

S. 1066

API strongly favors a coordinated, comprehensive approach which addresses prevention of oil spills and development of cleanup technology as well as swift and efficient oil spill response. S. 1066 is such an approach. API believes, however, that the fundamental premise of oil spill compensation and liability arrangements should be that all legitimate claims must be paid, and all claimants who have incurred actual losses must be compensated to the full extent of those losses. Therefore, API believes comprehensive Federal oil spill liability and compensation legislation should incorporate four fundamental principles:

First, the spiller should be "on the front line," responsible for removal costs and damages directly resulting from the spill, up to the applicable liability limit.

Second, a reasonably sized fund should be created through contributions from companies that handle oil to supplement the cost of removal and compensation for direct damages over and above the liability of the spiller.

Third, all oil spill removal costs, economic losses directly resulting from the discharge and actual costs incurred to restore or replace environmental losses should be compensated.

Fourth, the comprehensive Federal regime should be the only liability system for a discharge of oil into the marine environment.

API is concerned that S. 1066 does not effectively meet these principles, especially the fourth. In addition, S. 1066 outlines provisions to implement the International Civil Liability Convention and Fund Convention and their respective Protocols. These instruments, which involve international oil spill liability and compensation arrangements, have not been ratified by the Senate. There are questions as to how these complex arrangements would interface with domestic oil spill law under consideration and the precedence they would have.

S. 771

In contrast to the comprehensive approach which we favor, S. 771 would retroactively punish companies by denying Federal tax deductions for oil spill and hazardous waste cleanup costs based upon subjective determinations made under numerous Federal and state laws by a host of governmental agencies. As described below, the labyrinth created by S. 771 would give rise to serious policy, constitutional and technical concerns.

S. 771 would deny a taxpayer deductions for not only the costs incurred in the cleanup of oil spills or hazardous wastes, but also restitution or damages paid for injury caused by the spills (as well as attorneys' fees) if Treasury is "notified" by the Coast Guard or EPA that the taxpayer has failed to comply with any provision contained in numerous Federal and state environmental laws bearing upon cleanup responsibilities. Although there are constitutional concerns and many technical flaws in S. 771 that we will address in this submission, the most fundamental objection to the bill is that on both tax and social policy grounds S. 771 is simply bad legislation.

The U.S. income tax system is designed to levy a tax on the net profits of a taxpayer—not on gross revenue. The Tax Code, as a matter of sound tax policy, has long recognized that business expenses, even those arising from unusual or unexpected events, reduce profits and taxable income. Legislation that would deny a legitimate business deduction for cleanup costs and related expenses creates the possibility that phantom taxable income arises where a taxpayer has out of pocket expenditures. No taxpayer intends for an oil spill or a hazardous substance discharge to happen, but if one does occur, the cleanup and other costs are actual expenses that reduce profits and taxable income.

Any assertion that cleanup cost deductions force other taxpayers to "subsidize" cleanup costs is simply specious. It ignores the fact that expenditures for cleanup activities paid to suppliers, independent contractors and others becomes taxable income to them.

A fundamental problem with S. 771 is that it sends exactly the wrong message: it would discourage cleanup expenditures that in the public interest should clearly be encouraged. From time to time, Congress has disallowed certain deductions whose allowance would frustrate public policy. The cleanup of oil and hazardous substances unquestionably serves the public interest by restoring the environment, and Congress should encourage rather than frustrate these expenditures.

The provisions of S. 771 require that eligibility for tax deductions be determined entirely outside the Tax Code under the Clean Water ACT (CWA), the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and the Resource Conservation and Recovery Act (RCRA) as well as state statutes. S. 771 suspends indefinitely the determination of whether any expenditure for cleanup is tax deductible. Taxpayers engaged in good faith response efforts in the initial stages of spill cleanup will have no way of knowing whether their efforts will ultimately be viewed by the Coast Guard or EPA as complying with their interpretations of law.

Furthermore, aside from the constitutional issue concerning retroactive legislation, as a matter of policy taxpayers should be provided a predictable framework within which to conduct their business operations. Retroactive changes to that framework violate sound tax policy by changing the business standards after economic decisions have been made. S. 771 retroactively changes the tax structure for all taxpayers and specifically targets, in effect, a single taxpayer by making its provisions apply as of the very day of the recent Alaska oil spill.

Cleanup of spills or hazardous substance discharges should be conducted according to a comprehensive prevention and response program. The Tax Code is neither the appropriate mechanism nor the proper enforcement device. Numerous specific penalties exist under Federal and state civil and criminal laws which are designed to ensure compliance with environmental standards. For example, under the CWA, in the event of an oil spill, the operator may be subject to administrative fines ($5,000 for each offense), and civil penalties (up to $25,000 per day). Failure to comply with orders under CERCLA may result in treble damages to the United States and civil penalties of up to $25,000 per day of noncompliance. Failure to comply with orders under RCRA may result in a termination of the facility's authority to operate and a civil penalty of up to $25,000 per day of noncompliance. Proper enforcement of these laws provides adequate penalties for noncompliance and adequate incentives to ensure responsible behavior.

To illustrate further the inappropriateness of using the Tax Code to police environmental matters, S. 771's disallowance of a tax deduction will penalize U.S. taxpayers, but not foreign persons who, by treaty or otherwise, are not subject to U.S. taxation. Furthermore, S. 771's imposition on U.S. taxpayers of limitations on deductibility of cleanup costs may give foreign business a competitive advantage over U.S. business because of the additional after tax cost associated with United States business activities. Comprehensive legislation outside of the Tax Code can be designed to apply equally to U.S. and foreign persons who could potentially cause spills or other discharges.

The denial of all deductions for cleanup and other costs may bear little or no relationship to the severity of an alleged failure to comply with cleanup standards. The

denial of deductions to a taxpayer who refused to spend any money on cleanup would be a meaningless action. On the other hand, denial of all deductions to a taxpayer who in good faith spent large sums in a cleanup effort that was determined, after the fact, not to satisfy some minor aspect of a Federal standard or order imposes a significant disincentive to incur any cost at all.

The impact of denying the deductibility of cleanup costs would arbitrarily affect taxpayers differently. Companies in precarious financial condition will be deterred from, or financially unable to, effect cleanup. Disallowance of these costs could result in insolvency and failure to achieve the intended cleanup—again, contrary to the public interest.

S. 771 ignores the fundamental legal principles of proximate cause and due process. It may, in fact, deny due process by tying nondeductibility of cleanup costs to the ex parte actions of administrative agencies which are not even required to extend the taxpayer the opportunity of a hearing. Additionally, the legislation—clearly designed by its sponsor to punish a specific taxpayer—may be viewed judicially as so harsh, oppressive, arbitrary and unreasonable as to violate constitutional due process standards.

Code section 162(m)(1)(B) as proposed by S. 771 contemplates that the EPA will make determinations regarding taxpayer compliance under applicable state statutes. However, S. 771 offers no assurance that due process protections under such state laws will be afforded by the EPA to targeted taxpayers. Nor are issues regarding resolution of conflicts of law addressed. From an administrative view, dealing with 50 different state hazardous waste and spill regimes in addition to the numerous Federal regimes in order to determine tax deductibility will result in utter chaos. For example, a discharge which spreads across state borders or occurs in bordering waterways (such as the Columbia, Ohio, Allegheny, Monangehela, or Mississippi Rivers) would raise questions of which state and/or Federal law cleanup program standards apply.

Beyond the aforementioned policy and constitutional concerns, S. 771 is technically flawed. S. 771 lacks the necessary standards and guidance which would allow governmental authorities and taxpayers to determine with certainty whether a business expense even remotely related to a spill may be deductible. For example, proposed section 162(m)(5) would not only deny deductions for legal costs of defending a taxpayer against charges of environmental law violation, but may also make legal expenses associated with contracting for cleanup nondeductible. Legal fees incurred by taxpayers in order to prove absence of fault as well as fees for lawsuits brought against third parties responsible for causing a spill could be nondeductible. The cost incurred to meet legal standards of compliance might also be nondeductible. Likewise, proposed section 162(m)(5)(B)(iv) includes any cost required by Federal law within the definition of cleanup costs. As this subsection is worded, a specific agency finding of noncompliance with a single discharge cleanup requirement could deny taxpayer deductions relating to all cleanup costs incurred in a tax year including those incurred in full compliance with environmental laws.

Proposed section 162(m)(3) would reduce the tax attributes of a taxpayer by the amount of cleanup costs disallowed. Application of section 108(b)(2) would cause, in effect, a double denial of tax deductions related to the same cleanup costs. In addition to having the deduction of cleanup costs denied, taxpayers would be required to reduce the tax attributes by a like amount. This later adjustment would exact a second tax penalty, further discouraging any expenditure for cleanup costs.

In its original form, S. 771 correctly recognized that cleanup deductions should not be disallowed if the discharge was caused solely by an act of God, an act of war, negligence on the part of the U.S. government or an act or omission of a third party without regard to negligence. If omission of these items from the subsequent version of S. 771 (i.e., Amendment 116) was not inadvertent, API believes that such omission represents a deliberate and unconscionable extension of traditional and generally accepted principles of strict liability.

Proposed section 162(m)(2) would deny deductions in all cases where discharge was a result of "willful negligence or willful misconduct." This extends the limits of accountability beyond the recognized legal standard requiring that such conduct must be within the knowledge and privity of the taxpayer. Under the S. 771 standard, literally construed, cleanup following the willful misconduct of an employee would be nondeductible, even if the employer had no reason to believe that the employee would misbehave on the job.

This same section denies all cleanup deductions "where it can be shown" that a discharge was the result of such negligence or misconduct. In failing to stipulate to whom a showing must be made, S. 771 apparently forces the IRS to reach tribunal-like findings regarding tort negligence. Questions regarding the burden of proof and

the standards of review associated with determining willful behavior should be reserved for judicial determination. Moreover, no time limits are provided for making such determination. Unanswered is the question of whether intervening negligent acts occurring subsequent to the start of cleanup operations will retroactively deny deductibility for all of a taxpayer's cleanup expenses.

In addition, this provision of the Bill imposes a standard of joint and several strict liability with respect to deductions for cleanup. Cleanup costs incurred by investor partners to undo the negligent acts of others involved in joint undertakings would not be deductible. For example, an economic downturn could force a small transportation company involved in an oil spill into bankruptcy. Successor entities or partners of the bankrupt company would be reluctant to proceed with any cleanup of the company's negligent discharges where deductions for cleanup could be denied.

S. 771 emasculates the Tax Code's long-standing and generally accepted statute of limitation provisions by allowing the Coast Guard or the EPA unlimited time in which to notify Treasury of taxpayer noncompliance with environmental laws. Treasury would then have an additional one year to assess the deficiency associated with the entire disallowed deduction. This effectively precludes timely resolution of audit disputes, to the detriment of both government and taxpayer.

As drafted, disallowance of tax deductions could be triggered by a purely unintentional technical violation of an environmental order or decree. Administrative orders are often issued using standard forms not specific to the particular situation, requiring many more actions than may subsequently be determined to be necessary, and including time limits which are not intended as firm compliance dates. It is the general practice either to withdraw or modify such orders after negotiations have resulted in mutual agreement on specifics. Under the terms of S. 771, however, the Coast Guard or EPA could disallow tax deductions for a technical violation of such a preliminary order. Even if the order were later modified, nothing in the statute as drafted would reinstate the taxpayer's deduction. As a result of this process, the IRS, which has no expertise in environmental matters, is put in the untenable position of having to evaluate the complicated environmental determinations of other Federal agencies.

The references to sections 311(c) and 311(e) of the CWA are inappropriate. Section 311(c) authorizes the U.S. government to remove oil unless it is satisfied that the responsible party will properly do so. Section 311(e) allows the U.S. government to seek judicial relief in the event of a threat of a spill. Neither section 311(c) nor 311(e) imposes standards with which a taxpayer may comply or not comply. In addition, defining "discharge" by reference to sections of CWA and CERCLA potentially covers cleanup expenditures in connection with events which occurred and were settled in prior years. These inappropriate references further highlight the difficulties of force-fitting environmental laws with tax laws.

There is no specific provision in the environmental laws that requires the issuance of a notification that cleanup has not been conducted in compliance with their provisions. As a result, S. 771 raises a real question of whether the legal authority exists for the Administrator of EPA or the Commandant of the Coast Guard to issue the required notification. There is nothing in the referenced statutes to give substance to the noncompliance finding that would have to be made in the notification. This means that EPA or the Coast Guard would have virtually unlimited discretion effectively to disallow tax deductions based on findings not contemplated by the environmental laws they administer. As such, S. 771 would appear to drastically amend the environmental laws to incorporate a tax penalty procedurally and substantively inconsistent with the existing penalty provisions of those laws.

References to the provisions of the environmental laws are inadequate to reasonably support tax law consequences. As previously stated, decisions of tax deductibility should not be resolved by environmental law. Any noncompliance with the environmental laws is already adequately addressed by the environmental laws themselves. Those laws are not tax laws and are not suited for the imposition of tax law penalties.

In conclusion, API recognizes that our industry must do its utmost to prevent future oil spills and to respond effectively when spills do occur. In the wake of the Alaska oil spill, the principal U.S. oil shipping and receiving companies have launched an aggressive spill prevention, response and research program designed to handle the potential major tanker spill problems in all U.S. waters. The oil companies agreed on June 20 to create a new organization to fund research on tanker spill-related questions, modify tanker operating and manning procedures, improve oil recovery and cleanup techniques, respond to major spills nationwide and help on lesser spills, such as the late June spills, when requested. Funding of the new group will cost the industry an estimated quarter of a billion dollars during the five start-

up years. Clearly, it is imperative that the industry and government move rapidly to improve our understanding of, and capability to deal with, these tragic occurrences. We stand ready to assist the Congress and the Administration, in whatever way we can, in your efforts to establish a comprehensive and fair system for dealing with these difficult issues.

AMERICAN PETROLEUM INSTITUTE
June 27, 1989.

Hon. JOHN D. ROCKEFELLER, IV,
U.S. Senate,
Washington, DC

Dear Senator Rockefeller: At the June 21 hearings of the Senate Finance Committee you requested that API provide you with information regarding the percentage of oil transported by ship that is spilled due to tanker accidents. You further requested that we provide you information concerning the percentage of annual input of oil into the oceans, as well as the percentage attributable to natural sources, e.g., oil seepage and sediment erosion.

Approximately 24 million barrels (bbl.) a day of oil are delivered worldwide. Thus, the annual amount of oil transported by sea is 8,760,000,000 bbl.

To the best of our knowledge and that of experts in this field, statistics on the total amounts of oil which enter the oceans in specific years have never been compiled. Such a compilation can be made; but this would entail a considerable research effort. Even then, it would likely not be very accurate because the amounts of oil lost during such major spill events as the IXTOC-I blowout in the Bay of Campeche (1979-1980) and the tanker and platform destructions in the Iran-Iraq war have never been measured.

However, a reasonable estimate of how much oil gets into the oceans annually has been provided by the National Research Council's study, published in the 1985 report, Oil in the Sea: Inputs, Fates and Effects. A copy of the chapter entitled Inputs is enclosed for your information. This discloses (Table 2-22) that *between 1.7 and 8.8 million metric tons* of oil is estimated to enter the oceans annually; the best estimate is 3.2 mta. Detailed statistics on all major sources, including tanker accidents and natural oil seepage, are provided.

In summary:

1. Annual volume of oil which enters the sea from all sources: *3.2 million metric tons or 23,500,000 bbl.*
2. Percentage of this amount attributed to tanker transport accidents: *12.5% or 2,900,000 bbl.* This is three one-hundredths of one percent (.03%) of the oil transported by sea annually.
3. Percentage attributed to natural sources (oil seepage and erosion): *7.8% or 1,800,000 bbl.*

Should you need further data related to marine oil spill technology, please contact me or Dr. Jack R. Gould of my staff at 682-8321.

Sincerely,

CHARLES J. DIBONA.

Enclosure.

2
Inputs

INTRODUCTION

Petroleum hydrocarbons (PHC) enter the marine environment from many sources. Estimates of these PHC inputs remain uncertain because the sources are interrelated and available data are minimal.

Figure 2-1 shows the international flow of petroleum. The width of that flow is representative of the amount of petroleum being transported along these routes. This pattern of flow may change significantly in future years, particularly in arctic areas where petroleum production is increasing.

A major fraction of the world's petroleum continues to be produced and transported from countries different from those in which the petroleum is refined and consumed. During the past decade the quantity of petroleum transported by sea, as well as the number and tonnage of ships in operation, has increased significantly (British Petroleum Company, Ltd., 1980; Lloyd's Register of Shipping, 1980). This increase is shown in Table 2-1.

Sources of PHC into the marine environment considered in this report include natural sources; offshore oil production; marine transportion (operational discharges, drydocking, marine terminals, bunker operations, bilge and fuel oil transfer, and accidental spillages); the atmosphere; coastal, municipal, and industrial wastes and runoff; and ocean dumping. Each source type will be addressed in the following sections.

NATURAL SOURCES

The direct input of PHC from natural sources is estimated to be 0.025-2.5 million metric tons per annum (mta), the best estimate being 0.25 mta. Natural seeps contribute the major fraction of this total. A minor contribution is estimated to come from erosional processes. These consensus estimates, developed at the 1981 workshop, are based on geological and geochemical principles, many of which were described by Wilson et al. (1973).

In this report on natural sources, hydrocarbons of a petroleum origin are the only ones considered. Biogenically produced hydrocar-

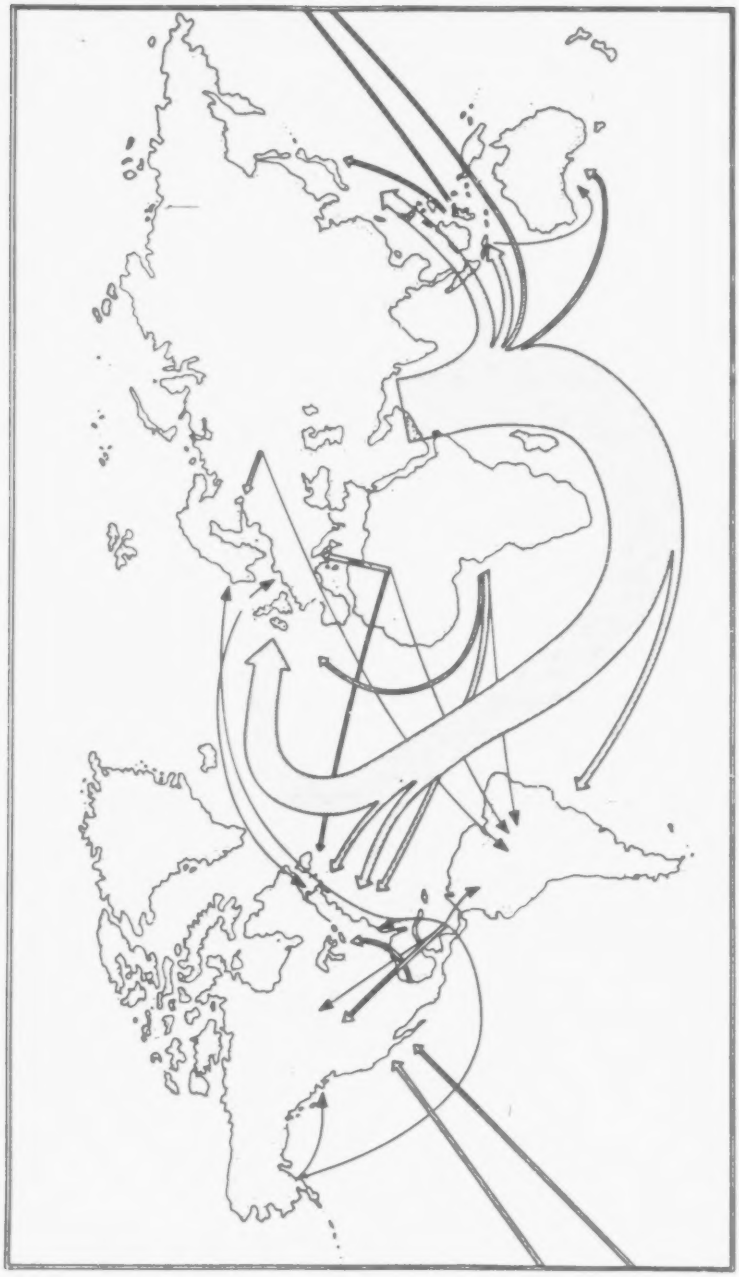

FIGURE 2-1 International marine transportation routes for petroleum.

SOURCE: Adapted from British Petroleum Co., Ltd. (1980).

45

TABLE 2-1 Petroleum Transport at Sea

	1971	1980	Ratio 1980/1971
Oil movement at sea (mta)			
Crude oil	1,100	1,319	1.19
Product oil	255	269	1.05
Total	1,355	1,588	1.16
World's merchant fleet			
Number of ships	55,041	73,832	1.34
Gross tonnage	247,200,000	419,911,000	1.70
World's tanker fleet			
Number of ships	6,292	7,112	1.13
Total deadweight tons	169,355,000	339,802,000	2.01
Average deadweight tons	26,900	47,800	1.78

bons, some of which have the same chemical structure as some PHC (e.g., n-alkanes and isoprenoid alkanes), are synthesized by marine organisms (see Chapter 3, Chemical Methods section).

Petroleum hydrocarbons, considered here as liquid petroleum and tar (hydrocarbons and other organic compounds with five or more carbon atoms), enter the marine environment naturally by means of two main processes--submarine seepage and erosion of sedimentary rocks. Estimating the contribution of each of these is a formidable problem for the following reasons:

1. Direct observation of submarine seeps is limited because the seeps are not normally visible. This invisibility leads to inaccurate estimates of seepage rates.
2. Submarine seeps flow intermittently, thus complicating both detection and estimation of seepage rates. The estimate is an average over geologic time, and in any particular year seepage events can exceed this estimate by orders of magnitude.
3. The potential area of continental margins where submarine seeps can occur is vast, whereas the areas of individual seepages are usually small, making an adequate inventory impossible with current technology and available monetary resources. In addition, the products of seepage cannot always be distinguished from petroleum pollution.
4. There are no direct measurements of the amount of petroleum entering the oceans by means of erosional processes, thus limiting the accuracy of any estimate.

Natural Seeps

Wilson et al. (1973) combined seepage rates on land with information on reported marine seeps, then extrapolated the data to the continental

margins, which they classified into areas of potentially high, medium, and low seepage. They incorporated tectonic history, earthquake activity, and sediment thickness in their appraisal. Five basic assumptions were used in their estimates:

1. More seeps exist in offshore basins than have been observed.
2. Factors that determine the total seepage in an area (number of seeps per unit area and the daily rate for each seep) are related to the general geologic structure of the area and to the stage of sedimentary basin evolution.
3. Within each structural type, the number of seeps and, to a lesser extent, rate per seep are thought to depend primarily on the area of exposed rock and not on rock volume. This assumption presumes that there is sufficient sediment volume and organic matter for maturation and generation of petroleum.
4. Most marine seeps are clustered within the continental margins where the thickness of sedimentary rocks, which provides the needed source rocks for the seepage, exceeds a certain minimum.
5. Seepage rates are lognormally distributed.

Although the geologic relationships developed by Wilson et al. (1973) that affect seepage rates are reasonable and seem to agree with observations, the statistical arguments of the last assumption may be questionable. On purely abstract grounds, an exponential distribution of seepage rates is more likely than a lognormal distribution. While oil field volumes are generally lognormally distributed, the actual volumes of all oil accumulations (most of which are perhaps too small to be produced and thereby cannot be classified as fields) are likely to have an exponential distribution (Harbaugh and Ducastaing, 1981). The volumes of natural seepages are probably statistically distributed in a manner similar to the volumes of oil accumulations in general, because seeps do not necessarily need sources as large as oil fields. Considering the difficulties encompassed in the other assumptions, however, the form of the frequency distribution may be a minor matter.

Since Wilson et al. (1973, 1974) made their estimate, little new information has become available that would alter their worldwide estimates of marine seepage rates. Their compilations of 190 reported submarine seeps were derived mostly from Johnson (1971) and Landes (1973) and can be augmented by four newly identified seep areas (Scott Inlet, Canada; Buchan Gulf, Canada; Australian North Coast; and Laguna de Tamiahua, Mexico). All identified submarine seep areas are shown in Figure 2-2; 54 individual submarine seeps are represented by one dot off the California coast, and another 28 are so represented in the Gulf of Alaska. Of the four recent reports (Levy, 1978; Levy and Ehrhardt, 1981; McKirdy and Horvath, 1976; and Geyer and Giammona, 1980), none estimates rates of seepage.

The estimates available to Wilson et al. (1973) for Coal Oil Point (Santa Barbara Channel) and Santa Monica Bay ranged from 0.0007 to 0.05 mta. The more recent estimate of Fischer (1978) for the entire Santa Barbara Channel ranges from 0.002 to 0.03 mta, a span of values not greatly different from earlier estimates.

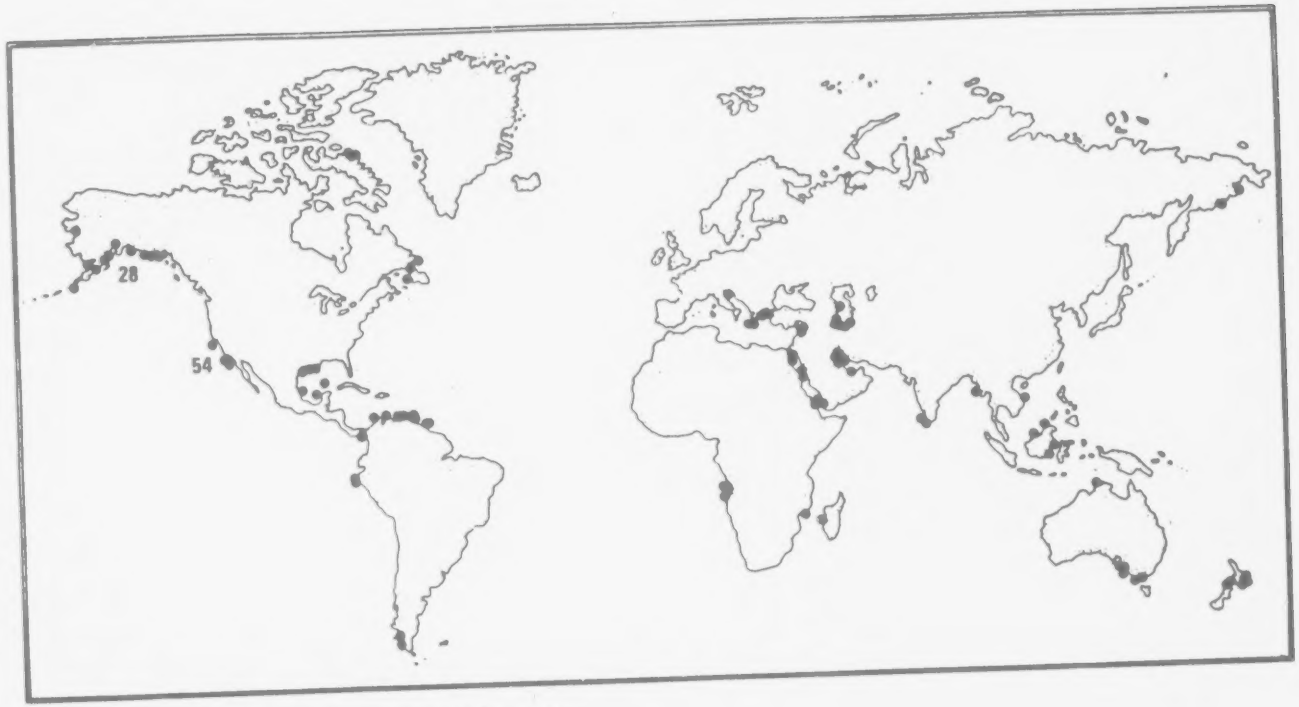

FIGURE 2-2 Location of reported marine seeps.

SOURCES: Wilson et al. (1973, 1974), Levy (1978), Levy and Ehrhardt (1981), McKirdy and Horvath (1976), Geyer and Giammona (1980), and Harvey et al. (1979).

TABLE 2-2 Petroleum Resource Estimates

Source	Amount		Reference
	Millions of Metric Tons	Billions of Barrels	
Offshore oil "tar" sands	30,000	200	Weeks (1965)
Total offshore petroleum resources	350,000	2,500	Weeks (1965)
Total petroleum resources in place	1,000,000	7,200	Hunt (1972)
Proven oil reserves and potential resources offshore	14,000	100	Albers et al. (1973)
Total proven reserves and potential resources onshore and offshore	86,000	630	Albers et al. (1973)
World exploitable oil (discovered 163,000 mt; undiscovered 141,000 mt)	304,000	2,200	Halbouty and Moody (1980)
Large "tar" deposits	320,000	2,100	Demaison (1977)

Geological Implications of Seepage Rates

A comparison of estimated seepage rates with the amount available for seepage can be used to assess the maximum geologic time during which seepages could be sustained.

Table 2-2 lists petroleum resource estimates for several categories of petroleum and illustrates the wide range of resource estimates that have been calculated. Table 2-3 illustrates the comparison. The wide range of assumed seepage rates includes the estimates of Wilson et al. (1973, 1974) but extends downward to 0.02 mta and upward to 10 mta. At the low end, 10,000 mt is near the value of 14,000 mt of total proven reserves and potential resources offshore as estimated by Albers et al. (1973). At the other end of the scale, Wilson et al. (1973, 1974) accepted an estimate of 300,000 mt in place. Because this amount may represent only 1% of the petroleum mobilized from source beds, they assumed that the amount available for seepage may be as much as 30,000,000 mt. This scale available for seepage has been augmented to 100,000,000 mt to attempt to include unknowns with regard to the amount of petroleum that would have been available for seepage during geologic time and will become available in the future during the lifetimes of the seepage.

Table 2-3 shows that to maintain petroleum seepage for a span of geologic time of at least 50 million years (most of the Tertiary period) requires that seepage rates be equal to or less than 2 mta, and

TABLE 2-3 Maximum Lifetimes (Million Years) of World Oil Deposits

Oil Available for Seepage (mt)	Assumed Seepage Rates (mta)							
	0.02	0.04	0.20	0.60	1.0	2.0	6.0	10
10,000	0.5	0.25	.05	0.02	0.02	0.005	0.002	0.001
30,000	1.5	0.75	.15	0.05	0.03	0.015	0.005	0.003
100,000	5	2.5	0.5	0.2	0.1	0.05	0.02	0.01
300,000	15	7.5	1.5	0.5	0.3	0.15	0.05	0.03
1,000,000	50	25	5	2	1	0.5	0.2	0.1
3,000,000	150	75	15	5	3	1.5	0.5	0.3
10,000,000	500	250	50	20	10	5	2	1
30,000,000	1,500	750	150	50	30	15	5	3
100,000,000	5,000	2,500	500	200	100	50	20	10

at the same time the amount available for seepage must be equal to or greater than 1,000,000 mt. If seepage is maintained for 500 million years (most of the Phanerozoic), then seepage rates must be equal to or less than 0.02 mta and the amount available for seepage must be equal to or greater than 10,000,000 mt. The petroleum seepage rate that best seems to accommodate the requirements of reasonable geologic time and reasonable assumptions concerning availability for seepage is 0.2 mta with an uncertainty both upward and downward of an order of magnitude. Thus, the conclusion is reached that the average rate of petroleum seepage over time ranges from 0.02 to 2.0 mta, with a best estimate of 0.2 mta. This value is lower by a factor of 3 than the best estimate of Wilson et al. (1973, 1974) of 0.6 mta.

Erosional Inputs of Petroleum

The amount of petroleum that enters the marine environment by erosional processes has not been estimated before. Previous work by Wilson et al. (1973, 1974) considered only the marine input from natural seeps. Any estimation of erosional input of petroleum into the oceans can only be approximate.

There are at least three places where the erosional input of petroleum into the oceans could be studied in detail. Weaver (1969) showed examples of petroleum seeps at the beach and in the sea cliffs facing the Santa Barbara Channel, where erosion presently is taking place. Giammona (1980) described the Laguna de Tamiahua area where there are onshore and offshore seeps. The Marine Pollution Subcommittee of the British National Committee on Oceanic Research (1980) identified the Dorset coast of southern England as another place where petroleum source rocks as well as petroleum-containing reservoir rocks are exposed. They suggested this area for the study of natural seeps and erosional processes affecting the distribution of petroleum in the marine environment.

Because no direct information is available on erosional inputs of petroleum into the oceans, an indirect approach must be taken. This

approach assumes that a portion of the organic carbon transported by all rivers is petroleum. Estimates of the organic carbon input into the oceans by rivers vary by nearly 2 orders of magnitude, from 30 to 1,000 mta, as summarized by Schlesinger and Melack (1981). They concluded, however, on the basis of two approaches, that the amount of organic carbon transported by rivers is 370-410 mta. Independently, Meybeck (1981) reached a similar estimate of 400 mta.

In estimations of the organic carbon content of rivers, no distinction has been made between carbon from modern biological sources, carbon from pollution, and ancient carbon indigenous to the eroded sediment being carried by the rivers. This latter class of carbon is of interest in estimating the erosional input of petroleum into the oceans.

The total organic matter content of rivers is divided about equally between dissolved organic carbon and particulate organic carbon (Meybeck, 1981). Meybeck further estimated that of the approximately 179 mta of particulate organic carbon that is transported by rivers, about 88 mta is ancient organic carbon. This ancient organic carbon is finely dispersed in clastic and carbonate rock particles, eroded from sedimentary rock formations on the continents (Ronov, 1976).

In ancient sedimentary rocks the amount of extractable organic matter constitutes, on the average, about 6% of the total organic matter (Hunt, 1979). If the extractable fraction in sediment particles in rivers is the same as that of source rocks, the amount in particulates in rivers would be 10.6 mta.

Most of the extractable organic material is dispersed in sedimentary rocks, but 0.5% of this material is petroleum (Hunt, 1972). If this factor is applied to the extractable organic matter of sediment particles in rivers, then the amount of petroleum transported from eroding outcrops by rivers to oceans is about 0.05 mta. This estimate may be high, because loss of organic carbon by oxidation during river transport and by sedimentation in estuaries leading to the oceans was not considered because of lack of data on these processes. Because of the numerous assumptions used to obtain this estimate, the uncertainty is at least an order of magnitude.

In estimating rates of seepage of petroleum into the marine environment, these rates have been compared with the amount assumed to be available for seepage over geologic time (Table 2-3). This same petroleum would be available for erosional processes over geologic time. The amount available is sufficient to sustain the estimated rates of natural seepage as well as rates of erosion of petroleum for an amount of time equivalent to the Tertiary period and probably longer.

OFFSHORE PRODUCTION

The amount of petroleum entering the marine environment from offshore petroleum production is estimated to be from 0.04 to 0.07 mta. Of these totals, major spills (>7 metric tons) from platforms contribute 0.03-0.05 mta, minor spills (<7 metric tons) 0.003-0.004 mta, and operational discharges 0.007-0.011 mta.

TABLE 2-4 Offshore Petroleum Production, 1979

Country	Production Rate x 10^9 bbl/year	x 10^6 mta
Saudi Arabia	1.03	147
United Kingdom	0.57	81
United States	0.39	56
Venezuela	0.38	54
Other countries	2.24	320
TOTAL	4.61	658

These estimates for the release of petroleum into the marine environment are lower, by about 30-50%, than the estimates generated earlier (NRC, 1975). Better data are available for operations, and major spill incidents in the United States have been more comprehensively documented since the earlier estimates were made. The available international data suggest that reductions have also been experienced outside the United States.

As reported by Burnet (1980), worldwide offshore petroleum production totaled approximately 658 mta in 1979. Over 50% of the production came from four countries: Saudi Arabia, the United Kingdom, the United States, and Venezuela. These data, which are the latest available published information, are summarized in Table 2-4. They are the basis for all subsequent calculations of the current petroleum input to the oceans from offshore petroleum production operations.

Operational (Produced Water) Discharges

In the United States, offshore produced water is normally discharged into the ocean after being processed to minimize the entrained petroleum content. Actual rates of discharge for produced water are not currently available. However, until 1976, the U.S Geological Survey (USGS) maintained records on these discharges from outer continental shelf operations in the Gulf of Mexico. At that time, 0.8 barrels of water were produced with every barrel of crude oil. This ratio is assumed to be still valid, and the same ratio is assumed to apply to all U.S. offshore production. This estimate is believed to be conservative, because recent Bureau of Land Management (BLM) environmental impact statements for outer continental shelf (OCS) lease sales assume a 0.6 water-to-crude-oil production ratio. The Department of Environment, U.K. (1976) report concerning discharges from offshore operations in U.K. waters stated: "The proportion of production water in crude oil will initially be less than 1 percent but will increase to

some 30 percent as the reservoir becomes depleted, particularly when water injection is used on an increasing scale." This study assumed a proportion of 10% averaged over the life of the U.K. fields. For other countries an assumption of 30% was used. It should be noted that no water is produced off the Saudi Arabian shore.

Produced water regulations in the United States require that the daily maximum petroleum content not exceed 72 mg/L and that the monthly average be less than 48 mg/L. The Environmental Protection Agency (EPA, 1976) Development Document on which these guidelines are based also includes the results of an in-depth statistical analysis of all available data, which indicates that facilities meeting the above limitations will achieve a long term average petroleum content of 25 mg/L or less. These figures, however, do not include the C_6-C_{14} "volatile liquid" hydrocarbons, which are not determined by the solvent extraction technique used for "oil and grease" analysis. Therefore, a somewhat higher estimate of 35 mg/L hydrocarbons entering the oceans from U.S. produced water discharges was used. Because this regime does not include (1) upset and bypass situations in which higher discharge levels are probably experienced and (2) the fact that state-of-the-art equipment is not installed at all locations, a high estimated average is believed to be twice this level, 70 mg/L. A reasonable best estimate is 50:20 mg/L "volatile liquid" hydrocarbons and 30 mg/L higher-molecular-weight hydrocarbons (>C_{14}).

Similar arguments for the U.K. offshore operations and those in other countries (Table 2-5) lead to a range of 50-70 mg/L for the estimated hydrocarbon content of produced waters.

Based on these assumptions, the volume of petroleum entering the world's oceans from offshore produced water discharges is calculated to be between 0.0075 and 0.0115 mta, with a best estimate of 0.0095 mta (Table 2-6).

Specific estimates were not made for deck drainage, drilling fluid discharges, and other minor sources of petroleum (Schreiner, 1980). These sources are probably accounted for within the limits of confidence of the above numbers.

Minor Spills

Since 1971 the USGS has maintained a computerized OCS events file for Gulf of Mexico oil and gas operations (Danenberger, 1976). Included are data on all crude oil spills. The USGS classifies spills as minor (<7 metric tons or 50 barrels) or major (>7 metric tons or 50 barrels). Table 2-7 summarizes the minor spills in the Gulf of Mexico OCS for the 8-year period 1971-1978. The average spillage rate for this period was 0.00024% of total crude oil produced. The record for minor spills in offshore Alaska is better. The Lower Cook Inlet spillage rate for all spills from 1971 to 1980 is 0.0001% of total crude oil produced (Wondzell, 1981).

Similar data for operations in other U.S. areas and outside the United States are not readily available. Offshore operations are moving into more severe environments, such as the arctic regions.

TABLE 2-5 Offshore Produced Water Effluent Limitations

Country	Oil and Grease Content Limit (mg/L) Average	Maximum
Abu Dhabi	-	15
Australia	30	50
Denmark	40	-
Egypt	-	60 (Mediterranean)
		15 (Red Sea)
France	-	20
Indonesia	30	-
Malaysia	100 (offshore)	-
	10 (coastal)	-
Netherlands	-	40
Nigeria	75	100
Norway	25-30	-
Spain	40 (Atlantic)	-
	60 (Mediterranean)	100
Trinidad	50	-
United Kingdom	40 (large facilities)	no more than 4%
	50 (small facilities)	greater than 100 mg/L
United States	48 (monthly)	72
	25 (long term)	
Venezuela	35	-

NOTE: Limitations shown here are from various sources. They are either existing government regulations, proposed government regulations (which could change), or limitations imposed by authorities for installations in operation in countries without regulations.

However, to balance this effect, there have been significant technological advances (such as warning systems and improved blowout preventers) that are reducing the occurrence of spills of all sizes. Average experience for all U.S. offshore operations probably is comparable to the Gulf of Mexico average, so a range of 0.00021-0.00030% is used for the United States. Another assumption is made that the worldwide percentage is about twice that of the United States, or 0.00042-0.00060 (Table 2-8). Clearly, there is uncertainty associated with this assumption.

With these data a range of 0.0027-0.0038 mta has been calculated as the estimate of petroleum entering the marine environment from minor spillage from offshore drilling and production activities worldwide. The best estimate is 0.003 mta, which is lower than the earlier NRC (1975) estimate of 0.01 mta.

TABLE 2-7 Minor Oil Spills, Gulf of Mexico Outer Continental Shelf, 1971-1978

Year	Oil Production (1,000 bbl)	Number of Spills	Volume Spilled (bbl)	Percentage of Production Spilled
1971	386,400	1,245	1,500	0.00039
1972	391,000	1,159	1,000	0.00026
1973	375,300	1,171	900	0.00024
1974	343,900	1,129	700	0.00020
1975	316,000	1,126	700	0.00022
1976	303,100	948	500	0.00016
1977	293,000	864	600	0.00020
1978	282,500	873	600	0.00021
TOTAL	2,691,200 (~384 mta)	8,515	6,500 (~0.0093 mta)	0.00024 (avg.)

NOTE: Minor oil spills are defined as <7 metric tons or 50 barrels.

Major Spills

As was mentioned previously, the USGS has maintained a computerized OCS events file for Gulf of Mexico oil and gas operations (Danenberger, 1976). The history of major oil spills (<7 metric tons or 50 barrels) from U.S. Gulf of Mexico operations for the period 1971-1978 is summarized in Table 2-9. Because of the statistical distribution of spills, one large incident in a particular year greatly influences the annual figure. However, the Gulf of Mexico 8-year average is fairly representative of any current year, i.e., the oil spillage rate from major incidents is 0.002% of the oil produced. A similar average may apply nationwide.

Accurate worldwide information on major spills is often difficult to obtain. Since 1979 the Oil Spill Intelligence Report (1979, 1980) has attempted to provide annual summaries of all incidents involving more than 20,000 gallons (or 68 metric tons) of oil. However, these surveys are admittedly incomplete. A single catastrophic incident is usually a major contributor to the annual total, but the probability of such an occurrence on an annual basis is very low and its amount is unpredictable. Currently the world record spill resulted from the Petroleos Mexicanos (Pemex) Ixtoc I well blowout on 3 June 1979. Until it was capped on 23 March 1980, a total of 0.44-1.4 mt of crude oil was released. The uncertainty in the amount of crude oil spilled is related to the problems associated with estimating flow from the open hole. Estimates of the amount burned vary from 30% (Ross et al., 1979) to as much as 58% (Program a Coordinada de Estadios Ecologicos en la

TABLE 2-6 Oil to the Marine Environment From Offshore Produced Water Discharges

Country	1979 Offshore Oil Production (1,000 bbl)	Water Production (BW/BO)[a]	Water Production (1,000 bbl)	Low: Oil Content (ppm)	Low: Oil Discharged Annually (bbl)	Best Estimate: Oil Content (ppm)	Best Estimate: Oil Discharged Annually (bbl)	High: Oil Content (ppm)	High: Oil Discharged Annually (bbl)
United States	389,100	0.8	311,300	35	10,900	50	15,600	70	21,800
United Kingdom	573,600	0.1	57,400	35	2,000	60	3,400	70	4,000
Other	2,621,300	0.3	786,400	50	39,300	60	47,200	70	55,000
TOTAL					52,200 (0.0075 mta)		66,200 (0.0095 mta)		80,800 (0.0115 mta)

[a] BW is barrels of water, and BO is barrels of oil.

TABLE 2-8 Oil to the Marine Environment From Minor Spills

Country	1979 Oil Production (1,000 bbl)	Percentage of Production Spilled		Volume Spilled (bbl)	
		Low	High	Low	High
United States	389,000	0.00021	0.00030	820	1,170
Other	4,227,000	0.00042	0.00060	17,800	25,400
TOTAL				18,620 (~0.0027 mta)	26,570 (~0.003 mta)

NOTE: Minor spills are defined as <7 metric tons or 50 barrels.

Sonda de Campeche, 1980). Only one major spill from spill of 0.003 mt in Indo Major oil spills occur sp ful annual input, several

A recent U.K. report that the average total oi 1979 was 0.00068% of prod Pollution, 1981). This s States. We feel, however the United Kingdom, is pr because of less restricti minor spills, uncertainty

Therefore, for purpos crude oil spillage outsid is from 2 to 4 times the U.S. rate. The estimate during offshore oil and g with a best estimate of 0 figures are given in Tabl

The estimated range in th to maritime transportatio best estimate of 1.45 mta total is estimated to com remainder is distributed mta), bilges and fuel oil spillages from tankers an

TABLE 2-9 Major Spills, Gulf of Mexico Outer Continental Shelf, 1971-1978

Year	Oil Production (1,000 bbl)	Number of Spills	Volume Spilled (bbl)	Percentage of Production Spilled
1971	386,400	11	1,300	0.0007
1972	391,000	2	200	0.0003
1973	375,300	4	22,200	0.0062
1974	343,900	8	22,700	0.0068
1975	316,000	2	300	0.0003
1976	303,100	3	4,700	0.0017
1977	293,000	4	1,700	0.0004
1978	282,500	3	1,100	0.0006
TOTAL	2,691,200	37	53,200	0.0020 (avg.)
TOTAL	2,691,200 (-386 mt)	37	53,200 (-0.0076 mt)	0.0020 (avg.)

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TABLE 2-10 Oil to the Marine Environment From Major Spills

Country	1979 Oil Production (1,000 bbl)	Percentage of Production Spilled		Volume Spilled (bbl)	
		Low	High	Low	High
United States	389,000	0.0020	0.0020	7,800	7,800
Other	4,227,000	0.0040	0.0080	169,100	338,200
TOTAL			18,620	176,900 (~0.025 mta)	346,000 (~0.05 mta)

NOTE: Major spills are defined as >7 metric tons or 50 barrels.

NOTE: Major spills are defined as >7 metric tons or 50 barrels.

During a ballast voyage, discharges of oil into the ocean may occur during two types of operation: discharge of departure (dirty) ballast without adequate separation and discharge of decanted water from slop tanks. After settlement, departure ballast separates into three parts, the largest part of which consists of water with an oil content on the order of 15-50 mg/L. An oil-water interface contains a relatively high oil content (in the order of 100-2,000 mg/L), and the oil layer on the surface is essentially pure oil.

By careful operation, the discharge of ballast water can be stopped as soon as the interface level is reached. In adverse sea conditions, the interface may be diffuse, and discharge is stopped when the oil content in ballast water rises above about 50 mg/L. Under less careful operation, the ballast may continue to be discharged for some time after the interface level has been reached. A similar situation might arise with discharge from slop tanks, which would have higher oil content but could be more easily controlled because of the slower pumping rate. Cargo lines that are not thoroughly flushed with water to slop tanks before being flushed to the sea may also cause oil discharges. In the worst cases, the tank procedure may be completely ignored and the total oil-water mixture will be discharged into the sea; and for operations employing retention on board procedures where dirty ballast, tank washings, and oily refinery process wastes are held in slop tanks for discharge at terminals, before 1977 procedures were inferred; these materials were discharged routinely into the sea.

Four oil companies (Exxon, Mobil, Texaco, and Tenneco) measured the quantities of retained slops for the period 1972-1977 (Gray, 1978). These data indicate a steady increase in the quantities of retained slops for the period 1972-1975. From 1975 to 1977 the quantities of retained slops leveled off or began to decline.

This decline of retained slops for company-owned tankers is probably attributable to improved efficiency of cargo discharge and possibly to the increasing use of COW systems by which, when fully implemented, slops retained aboard to a large extent are used to wash cargo tanks.

Thus, it is not correctly considered appropriate to use slop recovery data as a basis for estimating quantities of oil wastes discharged into the ocean. Smaller quantities of retained slops may not necessarily be an indication of the discharge into the ocean of smaller quantities of oil wastes.

TABLE 2-11 Results of LOT Operation Efficiency Tests

Country or Oil Company	Oil Tanker	Vessel Size (thousand ton deadweight)	Deadweight/ Discharged Oil	Reference
Japan	Alriyadh	237	53,000	IMCO (1981)
Norway	Berge Princess	280	36,000	Overaas and Solum (1974)
Mobil	Three tankers	50-212	15,000	Desel (1972)
Exxon	Five tankers	52-254	11,000-200,000[a]	Gray (1978)

[a]Seven out of nine discharged less than 1/30,000 Tc.

Recent data (IMCO, 1981) show that of 650 tankers inspected during the years 1979-1980, approximately 2% arrived at their loading terminals (situated all over the world) with no slops at all on board, for unexplained reasons. The data from the four oil companies (Gray, 1978) show similar trends. These vessels probably represent performances better than the worldwide average, so the assumption is made that in the worst case, 5% of the long-haul-voyage crude oil tankers would discharge all their ballast, a total quantity of oil wastes equal to 0.4% of Tc. The discharge from this source would therefore be 0.224 mta (1,319.3 x 0.85 x 0.05 x 0.004).

The oil discharge for the remaining 45% of the tankers is estimated as follows: 30% would discharge 1/7,500 Tc (i.e., twice the OILPOL 1954/1969 criteria) producing, 0.045 mta, and 15% would discharge oil equal to 0.1% of Tc, producing 0.168 mta. The total discharged by long haul tankers would therefore be 0.474 mta (0.037 + 0.224 + 0.045 + 0.168).

Crude oil tankers engaged in short haul voyages may not be able to perform LOT; some of these tankers are provided with SBT or similar arrangements to avoid contaminated ballast. These tankers would contribute negligible pollution. Other short haul tankers are engaged in dedicated trades that include arrangements to transfer contaminated ballast to shore reception facilities or to long haul, very large crude carriers (VLCC) from which they take oil cargo. The remaining short haul tankers (estimated to be 50%) discharge into the sea oil amounting to 0.2% of Tc (which corresponds to the total oil content in dirty ballast tanks), or 0.198 mta (1,319.3 x 0.15 x 0.5 x 0.002).

The total annual discharge of crude oil into the sea resulting from the normal operation of crude oil tankers is estimated to be 0.672 mta (0.474 + 0.198).

Although there is a degree of uncertainty associated with the numbers, there does seem to be an improvement since the earlier NRC (1975) estimate was made (0.67 versus 1.08 mta), particularly when an increase in the amount of crude oil transported by sea from 1971 to

1981 is taken into account. Possible reasons for this improvement are as follows:

1. In 1973 tankers were allowed to discharge unlimited quantities of oily wastes outside the prohibited zone (which was normally 50 miles from land), whereas such discharge is illegal under OILPOL 1954/1969;
2. There has been significant improvement in the awareness of the master and crew, shipowners and operators, of the existence of and need to observe international rules for oil pollution prevention;
3. Surveillance and control of illegal discharges have been considerably tightened in many countries;
4. Dramatic increases in the price of oil in recent years have resulted in more careful handling of cargo oil at discharge ports, with less oil remaining on board after discharge;
5. Increased use of COW systems has enabled a higher proportion of tankers to comply with the 1/15,000 Tc standard; and
6. Inclusion of "cleaner seas" provisions in charter party agreements has alleviated the economic disadvantages for operators to retain oil residues on board.

At the same time, certain adverse factors must be borne in mind, such as the aging of the existing tanker fleet, the lack of well-equipped new tankers, the shift of the control of tankers from experienced to less experienced operators, and the increase in spot market oil trades.

Product Oil

Of 269 mta of product oil carried by tankers, one-fourth (67 mta) is estimated to be persistent (lubricating oil, fuel oil) and three-fourths (202 mta) nonpersistent (gasoline, kerosene). The discharge of persistent oil is subject to OILPOL 1954/1969, whereas the discharge of nonpersistent oil is not presently controlled. The NRC (1975) report did not provide specific figures for the operational discharge of product oil.

There are no measured data on the quantities of oil residues for persistent oil trades. The operation of tankers carrying persistent product oil is assumed to be similar to that of crude oil tankers on short voyages; namely, 50% are engaged in dedicated trades that include arrangements to transfer contaminated ballast to shore reception facilities or are provided with arrangements to avoid contaminated ballast. These ships will contribute negligibly to pollution.

The LOT performance for the remaining 50% of these tankers, compared with crude oil tankers, may be affected by the following: (1) the relatively higher viscosities of persistent product oil may result in higher clingage and (2) the relatively higher density of oil may provide some empty cargo tanks in which ballast water without contamination may be carried on a subsequent ballast voyage.

Considering the above factors, the remaining 50% of these tankers are likely on average to discharge persistent oil equal to 1/2,000 Tc, or 0.017 mta (67 x 0.5 x 0.0005).

The discharge of nonpersistent oil is permitted at present under OILPOL 1954/1969, but the quantity of such product discharged into the sea might be less than expected, because of less clingage, easy decanting, and higher rate of evaporation.

It is assumed that 50% of tankers carrying nonpersistent oil have means to avoid the discharge of contaminated water; hence, the discharge from this source should be negligible. The remaining 50% discharge, on average, oil equal to 1/5,000 Tc, and, hence, the discharge of nonpersistent oil from this source would be approximately 0.020 mta (202 x 0.5 x 0.0002).

Therefore, the annual operational discharge of product oil is estimated as 0.037 mta (persistent 0.017 mta, nonpersistent 0.020 mta).

The sum of crude oil plus product oil discharges is thus estimated at 0.71 mta (crude oil 0.67, product oil 0.04).

DRY-DOCKING

The NRC (1975) report estimated that half the tankers would arrive for dry-docking at average intervals of 18 months without tank washing residue. Since then the situation has changed considerably, including longer dry-docking intervals (2 years on average), the increased availability of reception facilities in repair ports, the reduction of sludge or slop due to more efficient stripping and COW systems, the increased degree of enforcement of OILPOL 1954/1969, and the increase in the value of crude oil.

On the basis of the above factors, it is estimated that of the world tanker fleet of 340 million deadweight tons (dwt), 5% of tankers discharge into the sea sludge or slop amounting to 0.4% of dwt prior to dry-docking at intervals of 2 years. The annual estimated loss to the sea then becomes 0.034 mta (340 x 0.5 x 0.05 x 0.004).

MARINE TERMINALS INCLUDING BUNKER OPERATIONS

The NRC (1975) study estimated discharges of 0.003 mta during terminal operations. This result was attributed to spillages that resulted from human error, such as overfilling tanks and disconnecting hoses without adequate drainage. There are other causes of spillages, including line or hose failures, submarine pipeline ruptures, or storage tank ruptures. Discharges under this category include spillages occurring during bunkering operations (filling the ship's fuel compartments) either at a terminal or from a bunkering barge.

The U.S. Coast Guard (1976, 1977, 1979, 1980) keeps statistics on marine terminal spillages from all types of incidents (such as hose breaks, tanker overfilling, line fractures, shore tank ruptures). The average marine terminal spillage for 1976, 1977, and 1979 was 0.0025 mta (the 1978 figure was not included in the average because it included

a large tank rupture that was not a marine spill). As approximately 25% of the world oil movement by sea is around the U.S. coast and the rate of spillage is not greatly different elsewhere, an estimate can be made for marine terminal discharges of 0.010 mta (0.0025 x 4).

Major accidental spills in marine terminals, such as submarine pipeline and storage tank ruptures, although occurring rarely, may be the major causes of oil losses under this category (sometimes over 0.010 mt). However, no worldwide statistical data are available. For the present estimate, an average 0.010 mta of oil is assumed to be spilled into the oceans due to such accidents.

Thus, total spillage (discharges plus spills) from marine terminals is estimated at 0.020 mta (0.010 + 0.010).

BILGE AND FUEL OIL

Discharges under this category can be divided into three types: machinery space bilges, fuel oil sludge, and oily ballast from fuel tanks.

Machine Space Bilges

Steam tankers generate approximately 5 gal of bilge oil per day, while motor tankers generate about 15 gal per day. As there are about equal numbers of steam and motor tankers and tankers may operate some 300 days per year, the average quantity of bilge oil generated in a tanker per year is about 10 gal/42 x 7 x 300, or 10.2 metric tons.

The majority of the 7,100 world tankers retain such bilge oil in slop tanks for cargo oil or discharge it to shore reception facilities. Assuming that 10% of the total bilge oil generated in machinery spaces of tankers may be discharged into the sea, the annual discharge of bilge oil from tankers is estimated to be 10.2 tons x 7,100 x 0.1 = 7,242 tons, or 0.007 mta.

With a similar approach, the average quantity of bilge produced in cargo ships can be also estimated. The average size of tankers is approximately 25,000 gross tonnage (GT), with an average size of propulsion machinery of 20,000 horsepower (HP); in comparison, the average size of nontankers is approximately 3,700 GT, with an average size of propulsion machinery of 4,000 HP. Almost all nontankers are motor ships.

Therefore, the slop oil generated in each nontanker would on average be 3.0 gal per day (15 gal x 4,000/20,000), or 3.1 metric tons per year (3 gal/42 x 7 x 300). For the world's nontanker fleet of 66,700 the amount of total bilge oil produced would be 3.1 tons x 66,700 per year, or 0.207 mta.

The quantity of this bilge oil discharged into the ocean would depend on whether the ships are fitted with oily-water separators and on the availability and use of shore reception facilities. About half these ships are fitted with separators.

Assuming that ships with separators would discharge into the sea 10% of bilge oil and ships without separators two-thirds of bilge oil, the quantity of oil from bilge discharged into the sea per year is estimated to be 0.079 mta (with separators: 0.207 x 0.5 x 0.1 = 0.01 mta; without separators: 0.207 x 0.5 x 0.67 = 0.069 mta).

Thus, the rate of PHC input into the oceans from bilge discharges is 0.086 mta (tankers 0.007 mta, nontankers 0.079 mta).

Fuel Oil Sludge

Worldwide annual use of heavy residual bunker fuel for marine application is 108 mt. Tankers use 44 mt of bunker fuel, while nontankers use 64 mt of bunker fuel as well as 18 mt of gas oil.

Before being used in diesel engines, residual bunker fuel is purified to remove such impurities as sludge and water. The average sludge content in heavy fuel for marine application is 0.5%. For the present estimate, 0.3% of the quantity of heavy fuel oil used for diesel engines is assumed to be disposed of.

In the case of steam tankers, the usual practice is to retain sludge in cofferdams or slop tanks for cargo oil for eventual disposal to shore facilities. In the case of nontankers, the capacity of the sludge holding tank on board may not be sufficient to retain the sludge until the ship arrives at port. There would then be no alternative but to dispose of it into the sea.

If 20% of the sludge for motor tankers and 90% of the sludge for nontankers is discharged into the ocean, then the annual quantity of sludge discharged is estimated to be 0.186 mta (tankers 44 x 0.5 x 0.003 x 0.2 = 0.013 mta, nontankers 64 x 0.003 x 0.9 = 0.173 mta).

Oily Ballast From Fuel Oil Tanks

Water ballast for tankers is carried in cargo oil tanks or SBT, and no contamination of water ballast with fuel oil should occur. However, nontankers, which have to carry large quantities of water ballast for safety reasons, particularly fishing vessels, may have to carry water ballast in fuel oil tanks.

It is estimated that 2% of nontankers carry ballast water in fuel oil tanks, with an average clingage of 0.8% (including heavy and light fuel), a quarter of which will be discharged into the sea. Nontankers use some 64 mt of residual bunker fuel plus 18 mt of gas oil. Thus, the annual quantity of such oily ballast discharges is estimated to be 0.003 mta (82 x 0.02 x 0.008 x 0.25).

The total for the bilge and fuel oil inputs is 0.28 mta (bilge 0.086 mta, fuel oil sludge 0.186 mta, oily ballast 0.003 mta).

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ACCIDENTAL SPILLAGES

Tanker Accidents

Various sources of data on tanker accidents producing oil pollution have been available, including data from the International Tanker Owners Pollution Federation Ltd. (ITOPF, 1981) and the French Institute of Petroleum (IFP) (Bertrand, 1979), as shown in Table 2-12.

Nontanker Accidents

IFP (1981) average of annual oil spillages from nontanker accidents over the years 1974-1979 is 0.017 mta. Therefore, the total quantity of oil discharges due to maritime accidents is estimated to be 0.41 mta (tanker 0.39, nontanker 0.02).

The estimated range for quantity of oil discharged annually into the sea from transportation activities is 1.0-2.6 mta. This compares with the earlier NRC (1975) range of 1.5-2.8 mta. Table 2-13 shows the estimated range and best estimate of PHC discharged into the sea from each category of transportation losses. In general a ±100% range was considered realistic, but each category has been reviewed and slight adjustments have been made. Tanker accident data were considered the most reliable and were therefore assigned a ±10% range.

Although not addressed in this report in detail, spills caused through acts of war should be considered, where appropriate, in future discussions of inputs, particularly in areas such as the Persian Gulf.

TABLE 2-12 Annual Quantity of Oil Spills Due to Tanker Accidents

Year	Quantity (mt) ITOPF	IFP
1975	0.368	0.362
1976	0.456	0.364
1977	0.316	0.297
1978	0.388	0.487
1979	0.760	0.649
1980	0.187	
TOTAL	2.731 (1974-1980)	2.374 (1974-1979)
Average	0.390 mta (1974-1980)	0.396 mta (1974-1979)

NOTE: The annual figure varies considerably, influenced primarily by a few catastrophic incidents. For the purpose of the present estimate, the average figure of 0.39 mta is appropriate.

TABLE 2-13 Summary of Transportation Losses (mta)

Type of Loss	Range	Best Estimate
Tanker operations	0.44-1.45	0.71
Dry-docking	0.02-0.05	0.03
Marine terminals	0.01-0.03	0.02
Bilge and fuel oil	0.16-0.60	0.28
Tanker accidents	0.35-0.43	0.39
Nontanker accidents	0.02-0.04	0.02
TOTAL	1.00-2.60	1.45

ATMOSPHERE

The estimated range of atmospheric input of PHC into the marine environment is 0.05-0.5 mta. The workshop panel working on atmospheric input agreed that they could not provide a "best" estimate because of the great uncertainty associated with their estimate. The primary pathway for this input appears to be removal by rain of particulate material. Secondary pathways involve dry deposition of atmospheric particulate matter, precipitation scavenging of trace gases, and direct gas exchange with the ocean.

Less is known about the global sources, distribution, and fluxes of organic matter than any other major class of chemical substances in the atmosphere. Aside from methane and certain halocarbons in the vapor phase, very few measurements of gaseous or particulate organic matter are available outside urban areas. Recent reviews by Duce (1978) and Simoneit and Mazurek (1981) have attempted to synthesize the available data and summarize our knowledge. The situation is complicated, of course, by the fact that there are probably thousands of different organic compounds emitted to the atmosphere from natural and pollution sources, and many other compounds are produced from atmospheric, particularly photochemically induced, reactions. Each of these substances has its own characteristic chemical and physical properties and associated atmospheric sources, residence times, and sinks.

In terms of these pathways, petroleum entering the sea via the atmosphere must first evaporate or be emitted into the atmosphere. National emission inventories identify vehicle exhaust and evaporation losses as the greatest source, followed by industrial losses through evaporation, particularly oil industry operations.

Rough estimates of the input of PHC to the ocean from the atmosphere have been made in the past. The Study of Critical Environmental Properties (SCEP, 1970) estimated that 9 mta of PHC entered the ocean from the atmosphere at that time and suggested this number could double by 1980. NRC (1975) estimated that the atmospheric input of PHC was much lower, about 0.6 mta. This latter estimate was not based on any

measurements over the ocean, but simply on the total quantity of PHC injected into the atmosphere, its assumed reactivity in the atmosphere, and the general distribution of particles and the patterns of rainfall over the sea and the land.

The actual atmospheric input of petroleum to the ocean surface is very difficult to ascertain for several reasons. Petroleum is a complex mixture of many classes of compounds whose components have different reactivities and solubilities. For example, low-molecular-weight polynuclear aromatic hydrocarbon (PAH) and n-alkane reactivities with the OH radical span 5 orders of magnitude (Darnell et al., 1976). Chameides and Cicerone (1978) suggested that the photochemical lifetime of atmospheric ethane is about 25 days, while that of propane, butane, and pentane may be about 5 days. Zimmerman et al. (1978) and Hanst et al. (1980) have pointed out the potential importance of the photo-oxidation of nonmethane hydrocarbons as a source for atmospheric CO. Gas to particle conversion also occurs for organic material (Simoneit and Mazurek, 1981; Duce, 1978). During transport from continents to the sea via the atmosphere, particle fractionation may occur. Hence, if the organic composition is different for various particle size classes, the overall atmospheric particulate organic composition will change as a function of transport distance and time. Thus the organic chemical composition of petroleum-derived substances in the remote marine atmosphere may bear very little resemblance to what was emitted into continental air masses several thousand kilometers away. Many individual compounds in petroleum are also produced from other natural sources, such as n-C_{15} and n-C_{17} alkanes from marine phytoplankton, pristane from zooplankton, and n-C_{27} and n-C_{29} alkanes from land plants (see Chapter 3, Chemical Methods section). In several areas of the ocean, such as upwelling zones or downwind of major forests, these compounds may make up a significant portion of the hydrocarbons in the atmosphere. Finally, there is a paucity of data on petroleum organic compounds in rain, vapor, and particulate samples from open ocean areas, thus requiring a large number of simplifying assumptions to be made in any estimate of air to sea transport.

Taking into consideration the problems discussed above, the workshop panel on atmospheric input decided to concentrate on the n-alkane components of petroleum. The alkanes constitute approximately 30% of petroleum and some data are available, albeit very limited, to undertake estimates of their atmospheric input to the open ocean (Ketseridis and Eichmann, 1978; Eichmann et al., 1979, 1980; Hahn, 1981; Gagosian et al., 1981a; Gagosian et al., 1982; Atlas and Giam, 1981). Data for PAH are fewer and not sufficient to estimate their atmospheric input. Aerosol samples that had an oceanic origin were collected from coastal Norway by Bjorseth et al. (1979). The total PAH concentration averaged 1.6 ng/m^3 (nanogram per cubic meter). Hahn (1980) found PAH to be 80% of the n-alkane concentration for aerosol samples from the southern North Atlantic. His PAH values averaged 11 ng/m^3. However, no single PAH was detected in greater than 5-pg/m^3 (picogram per cubic meter) air concentration for particles at Enewetak Atoll, Marshall Islands, in the central North Pacific (Gagosian et al., 1981a). No PAH vapor or rain data have been reported from the open ocean.

As stated earlier, many of the n-alkanes produced by marine plankton and land plants are the same as those in petroleum. It is difficult to subtract out this "biogenic" component from many of the data sets available without introducing a preconceived bias. Rather than do this for selected samples, we did not do it for any of them. Atmospheric inputs to the ocean are thus derived for n-alkanes as a class of organic substances. The fraction of these n-alkanes that are of petroleum origin is uncertain. Thus the fluxes obtained represent maximum values relative to petroleum n-alkane input into the ocean from the atmosphere.

There are few data for n-alkanes over the ocean, limited basically to those of three research groups: the Ketseridis-Eichmann-Hahn group, the Gagosian-Duce-Zafiriou group, and the Atlas-Giam group. Data from over the open North Atlantic Ocean, from the Irish coast, and from Cape Grim, Tasmania, in the Indian Ocean are from the Ketseridis-Eichmann-Hahn group (Ketseridis and Eichmann, 1978; Eichmann et al., 1979, 1980; Hahn, 1981). Data from Enewetak Atoll, Marshall Islands, in the tropical North Pacific, have been obtained by the Gagosian-Duce-Zafiriou and Atlas-Giam groups (Gagosian et al., 1981, 1982; Zafiriou et al., 1982; Atlas and Giam, 1981).

The observed concentrations of particulate and vapor phase alkanes in the marine atmosphere are presented in Tables 2-14 and 2-15. Data from three North Atlantic sites are presented. Loop Head is on a peninsula on the west coast of Ireland at about 52°30'N, 9°50'W. Samples were collected from a cliff about 70 m above sea level. Samples collected only when the wind was from the ocean are reported here. Samples were also collected from a ship at the Joint Air/Sea Interaction (JASIN) site, located between Iceland and Scotland (60°N, 13°W). The tropical North Atlantic samples were also collected from a ship, in this case operating in the North Atlantic trade wind regime at approximately 15°N between Africa and the Caribbean Sea. The German data from Cape Grim, Tasmania, were obtained from the Australian Baseline Atmospheric Monitoring Station located on the northwest tip of Tasmania (40°41'S, 144°40'E). Samples were collected on a cliff 90 m above sea level. The samples obtained by the Gagosian-Duce-Zafiriou and Atlas-Giam groups were collected from a 20 m tower located on the windward coast of Bokandretok Island, Enewetak Atoll, Marshall Islands (11°20'N, 162°20'E). Sample collection on Enewetak was controlled automatically by wind speed and direction as well as atmospheric particle counts to avoid local contamination. Efforts were made in all studies to avoid local contamination.

Concerning the analytical methodology of measuring hydrocarbons in atmospheric samples, a recent review by Simoneit and Mazurek (1981) and reports by Ketseridis et al. (1976) and Gagosian et al. (1981a) discuss the necessity of ultraclean samplers and sampling conditions. The need to separate the hydrocarbon classes from other organic compound classes (usually by liquid chromatography) before gas chromatography (GC) and GC/mass spectrometry for quantitative analyses and structural determination was stressed by Gagosian et al. (1981a). The use of high resolution glass capillary GC for analysis is needed. These hydrocarbon measurements must be made in conjunction with micrometeorological studies of the sampling site and long range transport studies to

TABLE 2-14 Particulate n-Alkane Concentrations in the Marine Atmosphere (ng/m^3 STP)

n-Alkane	Loop Head, Republic of Ireland[a]	JASIN Site[b]	Cape Grim[c]	Tropical North Atlantic[d]	Enewetak[e]
n-C_{15}	0.06	0.10	0.12	4.1	
n-C_{16}	0.13	0.12	0.27	3.2	
n-C_{17}	0.08	0.26	0.32	4.2	
n-C_{18}	0.19	0.17	0.13	2.5	
n-C_{19}	0.16	0.20	0.13	8.2	
n-C_{20}	0.33	0.24	0.17	1.3	
n-C_{21}	0.22	0.26	0.35	1.1	0.0017
n-C_{22}	0.26	0.28	0.11	3.0	0.0020
n-C_{23}	0.31	0.29	0.15	2.0	0.0023
n-C_{24}	0.45	0.21	0.18	0.4	0.0021
n-C_{25}	0.37	0.33	0.18	0.6	0.0030
n-C_{26}	0.27	0.28	0.20	0.5	0.0022
n-C_{27}	0.23	0.37	0.52	0.6	0.0067
n-C_{28}	0.22	0.19	0.40	0.3	0.0037
n-C_{29}					0.0170
n-C_{30}					0.0033

[a]Eichmann et al. (1979) and Hahn (1981).
[b]Hahn (1981).
[c]Hahn (1981) and Eichmann et al. (1980).
[d]Ketseridis and Eichmann (1978).
[e]Gagosian et al. (1981a, 1982); average of six samples.

ascertain the sources and transport pathways involved. Clearly, data are also needed on other anthropogenic compounds, such as chlorinated hydrocarbons, phthalate esters, and trace metals, along with source marker information such as ^{210}Pb and $\delta^{13}C$ to interpret the hydrocarbon data more fully.

Table 2-14 lists the particulate n-alkane data from C_{15}-C_{30}, and Table 2-15 presents the vapor phase n-alkane data for C_{10}-C_{30}. Particulate n-alkane data for C_{10}-C_{14} were not presented, since these compounds cannot be quantitatively recovered during the extraction of the filter with organic solvent, the solvent evaporation, and the liquid chromatography steps in the analytical scheme (Mackay and Wolkoff, 1973).

As might be expected for such different oceanic regions, the measured concentrations of particulate and vapor phase n-alkanes were quite different at several of these locations. Data for particulate n-alkanes (Table 2-14) from the Ireland, JASIN, and Cape Grim sites are all rather similar, generally within a few tenths of a ng/m^3. All

TABLE 2-15 Vapor Phase n-Alkanes in the Marine Atmosphere (ng/m³ STP)

n-Alkane	Loop Head, Republic of Ireland[a]	JASIN Site[b]	Cape Grim[c]	Enewetak[d] Filterpak	Enewetak[d] Polyurethane Plugs	Enewetak[e] Polyurethane Plugs
n-C_{10}	12	15	22			
n-C_{11}	14	9	20			
n-C_{12}	11	5	8			
n-C_{13}	9	4	8	0.220		
n-C_{14}	9	3	6	0.130		
n-C_{15}	14	6	12	0.466		
n-C_{16}	8	4	8	0.220		
n-C_{17}	10	5	9	0.055		
n-C_{18}	12	5	8	0.107		
n-C_{19}	10	5	10	0.107		
n-C_{20}	18	6	9	0.107		
n-C_{21}	14	6	11	0.107		
n-C_{22}	20	5	8	0.107		
n-C_{23}	32	5	6	0.108	0.22	
n-C_{24}	22	3	6	0.109	0.134	0.032
n-C_{25}	16	3	6	0.110	0.134	0.0995
n-C_{26}	9	2	5	0.108	0.130	0.0881
n-C_{27}	7	2	3	0.106	0.108	0.0955
n-C_{28}	6	1	2		0.106	0.0824
n-C_{29}					0.0806	0.0819
n-C_{30}						0.0810

[a]Eichmann et al. (1979) and Hahn (198
[b]Hahn (1981).
[c]Eichmann et al. (1980) and Hahn (198
[d]Atlas and Giam (1981).
[e]Zafiriou et al. (1982).

are much lower, however, than the
Atlantic. The reason for this di
sampling area is in the region of
large quantities of sand and soil
North Atlantic in the northeast t
of Africa would not be expected t
derived atmospheric n-alkanes, ev
traffic along that coast. Viewed
presented in Table 2-14, it is te
North Atlantic data reported are
Clearly additional measurements t
JASIN, Ireland, and Cape Grim dat
concentrations over the North Atl
the other oceans.

Particulate n-alkane concentr
considerably lower than those ove
These data are probably more near

TABLE 2-16 Summary of Atmospheric Inputs of n-Alkanes into the Ocean (mta)

Mechanism	Case A	Case B
Rain scavenging of particles	0.0325-0.25	0.00125-0.013
Rain scavenging of gases	1×10^{-7}-0.025	1×10^{-7}-0.0012
Dry deposition of particles	0.00045-0.0048	0.000025-0.00022
Direct gas exchange	0-0.002	0-0.00004
TOTAL	0.028-0.32	0.00215-0.0138
GRAND TOTAL	0.029-0.3	0.003-0.3

Ocean, South Pacific Ocean, South Atlantic Ocean, and Indian Ocean regions far from continental influences.

Vapor phase n-alkane concentrations are presented in Table 2-15. Again, the Ireland, JASIS, and Cape Grim data are quite similar, but they are considerably higher than the Enewetak data, generally by a factor of 50-100. Note that there is, in general, good agreement between the Gagosian-Duce-Zafiriou and Atlas-Giam data at Enewetak for n-C_{17} to n-C_{29} alkanes. There are no vapor phase n-alkane data [illegible] Ireland, JASIS, and Cape Grim data [illegible] Enewetak data [illegible] Gagosian-Duce-Zafiriou and Atlas-Giam data [illegible]

[illegible]

[illegible]

[

As stated earlier, n-alkanes constitute approximately 30% of the organic components of petroleum. Cycloalkanes, PAH, and heteroatomic (nitrogen, sulfur, and oxygen) organic compounds make up the remainder. No data are available for the cycloalkane and heteroatomic compounds. Only a few numbers are available for PAH. Measurement of these other organic constituents of petroleum in vapor, aerosol, and rain samples are also strongly recommended.

The approach taken in using n-alkanes to estimate the input of petroleum into the ocean via the atmosphere is problematic. On one hand, using n-alkanes may give a maximum value of petroleum hydrocarbon atmospheric input, because many natural marine and terrestrially derived n-alkanes are included in the overall n-alkane deposition value. On the other hand, many organic components of petroleum, such as branched alkanes, cycloalkanes, and alkylated aromatics--the latter of which react very fast with OH radical to produce oxygenated species that fall to the ocean surface--are not included in the approach presented here. This suggests that using n-alkanes as an atmospheric input marker for the petroleum underestimates the input. On the basis of these facts, the estimate of PHC input is increased about two-thirds over that of the total n-alkane input. The range estimate for PHC input is thus about 0.05-0.5 mta.

More precise estimates of the atmospheric input of petroleum to the ocean will have to await information on the inputs of the various components of petroleum into the sea surface and further understanding of the reaction products, pathways, and rates of transformation of these compounds in the atmosphere.

TABLE 2-17 NRC Estimates of Hydrocarbons to World Ocean from Municipal and Industrial Wastes and Runoff (mta)

Source	NRC (1975)	1981 NRC Workshop	
		Most Probable	Likely Range
Municipal wastewater	0.3	0.75	0.46-1.5
Industrial			
Nonrefinery	0.3	0.2	0.1-0.3
Refinery	0.2	0.1	0.086-0.46
Urban runoff	0.3	0.12	0.1-0.2
River discharges	1.6	0.094	0.003-0.465
Ocean dumping	[a]	0.0014	0.0005-0.002
TOTAL	2.7	1.2	0.6-2.1

[a]Not estimated.

The wastewater samples were analyzed for total extractable organics and for total hydrocarbons (THC). The results of these analyses were compared with reported concentrations of oil and grease from the routine monitoring done by the wastewater management agencies as reported by [illegible] (1980). Regression analysis indicates that THC accounts for [illegible] percent of the oil and grease found in the effluent [illegible] the use of the EPA [illegible]

The study was primarily [illegible] the major [illegible] wastewater [illegible] was estimated to be [illegible] annually [illegible] [illegible] [illegible]

the remainder of the country receive secondary treatment, the THC discharged to the U.S. coastal waters would be

$$[120 \times 10^6 \times 0.3 \times 6.8\ (10\text{-}0.33) \times 10^{-6} \times 365]$$
$$+ [120 \times 10^6 \times 0.7 \times 6.8\ (1.00\text{-}0.40) \times 10^6 \times 365]$$
$$= 185{,}000 \text{ ta, or } 0.19 \text{ mta}$$

This calculation assumes that the oil and grease values reported by Eganhouse and Kaplan (1981, 1982) for the Los Angeles area are representative of discharges throughout the United States.

Evidence that this estimate of 0.19 mta for the entire United States is not too far out of line comes from Connell (1983). He reported that about 0.012 mta of petroleum hydrocarbons are going into the Hudson-Raritan Estuary from sewage discharge. This represents about 6-7% of the overall U.S. estimate for sewage discharges.

The calculated per capita THC discharge rate of 6.8 g/d cannot be used for other areas of the world because of the widely varying usage of petroleum products. In 1980, the United States used 18.3 million barrels per day (bbl/d) of petroleum products (International Petroleum Encyclopedia, 1980), and the estimated discharge of THC to the coastal waters if the wastewaters were untreated would have been about 298,000 ta ($120 \times 10^6 \times 6.8 \times 10^{-6} \times 365$), or about 16.1 ta for each 1,000 bbl/d consumed. This factor and an estimate of the extent of wastewater treatment in various areas of the world are used to estimate a global discharge, as shown in Table 2-18.

The estimated global discharge of 0.75 mta is based on a series of assumptions that are supported by few data. Note that one of these assumptions is the equivalency of THC with PHC. There is no doubt that PHC makes up a major fraction of THC, but the exact percentage is not known. However, the calculations do provide a rationale for the estimation procedure and show the areas in which measurements and data are required.

Nonrefinery Industrial Wastes

A sizable fraction of nonrefinery industrial waste discharges into municipal wastewater systems and its PHC have been accounted for in the previous section. However, there is a quantity of PHC that goes more or less directly into the marine environment through coastal nonrefinery effluent discharges. Extremely limited quantitation of this source has been made, and even less information is published for reasons of confidentiality. Previous estimates have been made by the NRC (1975) of 0.3 mta, and the Royal Commission on Environmental Pollution (1981) of 0.150 mta. Therefore, the estimate of this input of PHC is put at 0.2 mta, with full realization that the confidence in this number is quite limited.

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TABLE 2-18 Global Discharge of Hydrocarbons Into Municipal Wastewaters

Area	1980 Petroleum Consumption[a] (millions of bbl/d)	Estimated Untreated THC Load[b] (mta)	Percent THC Removed by Treatment	Residual THC (= PHC) Discharged (mta)
North America				
United States	18.3	0.30	38[c]	0.19
Canada	1.8	0.03	38[c]	0.02
Latin America	4.2	0.07	0	0.07
Asia and Pacific	9.1	0.15	0	0.15
China	1.7	0.03	0	0.03
Middle East	2.0	0.03	0	0.03
USSR and Eastern Europe	10.5	0.17	30[d]	0.12
Western Europe	10.5	0.17	30[d]	0.12
Africa	1.2	0.02	0	0.02
TOTAL	63.1	0.97		0.75

[a]Source: International Petroleum Encyclopedia (1980).
[b]Assuming 16.1 ta of THC per 1,000 bbl/d consumed.
[c]1 - 185,000/298,000 = 0.38.
[d]Assumed.

Industrial Wastes From Refineries

This category of refinery discharges includes only those refineries that discharge PHC from their own wastewater facilities. Other refineries that do not have their own facilities are assumed to discharge their wastewater into municipal wastewater facilities.

Recently, estimates were made of the amount of PHC discharged with refinery industry effluents (National Petroleum Council, 1981). The National Petroleum Council (NPC) determined during 1977-1979 that for those refineries that treat and discharge their own wastewater, 0.002-0.004 mta of PHC were discharged. These values were based entirely on oil and grease analyses (one can assume that volatile liquid hydrocarbons were not analyzed).

The NPC related PHC discharge rates to total operating capacity of U.S. discharge refineries. It is estimated that 0.0025-0.005 kg of PHC is discharged annually for each 10^3 kg/yr of operating capacity. This value can be compared to a 1977 European value of 0.04 kg/10^3 kg (Royal Commission on Environmental Pollution, 1981). It also can be compared to the 1967 U.S. refinery survey value of 0.075 kg/10^3 kg (National Petroleum Council, 1981).

Selection of PHC discharge rates for the world is difficult. The United States seems to be unique in its rate estimate. Either its rate of 0.005 kg/10^3 kg (upper value of U.S. range) or the European rate of 0.04 kg/10^3 kg could be applied to the Canadian refinery rate. For these calculations, the higher rate was used for Canada. For the rest of the world, the PHC discharge rate is assumed to be no better than that which was measured in the 1967 U.S. refinery survey.

Estimating the fraction of PHC that reaches the ocean from all worldwide refinery sources is also difficult. In the United States, the Environmental Protection Agency (EPA) has determined the amount of refinery wastewater discharged directly into receiving bodies and indirectly into publicly owned treatment plants (Environmental Protection Agency, 1978, 1979). The following percentages are based on the processing capacity of refineries, not numbers of refineries.

Approximately 81% of all refineries discharge wastewater directly into receiving bodies; another 14% discharge indirectly to publicly owned treatment plants; the remaining 5% have no wastewater discharges. In California, 64% of all refineries discharge directly into receiving bodies; the rest into publicly owned treatment plants. In the continental United States, approximately 50% of all refineries discharging directly into receiving bodies are near the coast (an additional 7% occurs outside the continental United States). Of all the refineries discharging into public treatment plants, 63% are near the coast.

For the United States, the fraction of PHC directly reaching the world oceans from refinery sources is estimated to be 0.5. The fraction of PHC reaching the world oceans from other locations of the world is a rough estimate based on limited data.

The new values of 0.005 kg PHC/10^3 kg production for the United States, 0.04 for Canada and Europe, and 0.075 for the rest of the world have been used to obtain a refinery PHC global discharge estimate of 0.10 mta (Table 2-19). The Royal Commission on Environmental Pollution (1981) estimates a total global discharge from refineries to the sea of 0.06 mta.

Urban Runoff

The global input of petroleum hydrocarbons to coastal waters from urban runoff was estimated by NRC (1975) to be 0.3 mta. The value was based in part on the assumption that urban runoff contributed about half the amount of PHC contributed by municipal and nonrefinery wastewaters. The crudeness of this estimate was unavoidable because of the lack of measurements of PHC in urban runoff. The situation 8 years later is only slightly better because most of the studies undertaken in the intervening years have focused on analytical methods of characterizing the PHC fractions rather than on mass contributions of PHC. Part of this dilemma may be due to the difficulty of representative sampling of the runoff. Other problems are the determination of mean PHC concentrations and the volume of runoff, which permit accurate estimation of

TABLE 2-19 Estimated Global Discharge of Petroleum Hydrocarbons in Refinery Wastewaters

Geographic Area	Crude Oil Refinery Capacity 10^6 bbl/d	mta	Estimated Hydrocarbon Loss (kg/10^3 kg)	Total PHC Discharge in Refinery Wastewaters (mta)	Estimated Fraction to World Ocean	PHC Input Into Ocean (mta)
North America						
United States	18.4	960	0.005	0.0048	1/2	0,002
Canada	2.2	115	0.04	0.0046	1/5	0.001
Latin America	8.1	420	0.075	0.0315	4/5	0.025
Asia-Pacific	10.6	550	0.075	0.0413	1/2	0.021
China	1.8	90	0.075	0.0068	1/4	0.002
Middle East	3.7	190	0.075	0.0143	1/3	0.005
USSR and Eastern Europe	14.2	740	0.075	0.0555	1/3	0.018
Western Europe	20.22	1,050	0.04	0.0420	1/3	0.014
Africa	1.7	90	0.075	0.0068	1/2	0.003
TOTAL	80.9	4,205		0.1946		0.10 (best estimate)

NOTE: Conversion is 1 mta = 19,000 barrels per calendar day capacity.

mass PHC contributions. Estimates of PHC in runoff should be based on factors such as runoff area, watershed characteristics, PHC usage, and population density. Recent papers that have reported on the characterization of PHC in urban runoff appear in Table 2-20.

Most of the studies in Table 2-20, except that of Hoffman et al. (1982), do not provide sufficient data for the estimation of PHC contributions from urban runoff based on watershed characteristics. There have not been enough studies reporting watershed characteristics to permit rational estimation. Recognizing the difficulties of quantifying the mass of PHC contributed and considering hydrological, physical, and land use variations in urban areas (as well as the definition of urban), we conclude that the best estimate of urban PHC runoff must be based on estimates of per capita contributions. Population is one of the principal generating factors of urban PHC runoff for a given petroleum consumption level. Table 2-21 shows data for per capita estimates of PHC contributions from several locations.

Despite the gross variation in per capita PHC contribution, it is believed to be the most accurate basis for current estimation of urban PHC runoff. A per capita PHC contribution of 1.0 g/cap/d is probably the most reliable estimate that can be made from present information.

Employing the unit per capita contribution of 1.0 g/cap/d per day and a coastal population of about 120 million, one can estimate the urban runoff contribution of the United States to be about 0.04 mta. Assuming the United States uses about 0.3 of the world's hydrocarbons, one can estimate the world urban runoff PHC contribution to the world ocean to be about 0.12 mta, which is about one-third of the contribution estimated by NRC (1975).

TABLE 2-20 Selected Urban Runoff Studies

Location	Drainage Area (ha)	Number of Storms Studied	Reference
Seattle	-	-	Wakeham (1977)
North Philadelphia	616		Hunter et al. (1979)
North Philadelphia	616	5	Hunter et al. (1979)
North Philadelphia	616		Whipple and Hunter (1979)
Trenton A	8	2	Whipple and Hunter (1979)
Trenton B	82	3	Whipple and Hunter (1979)
Los Angeles	210,000	1	Eganhouse and Kaplan (1981, 1982)
Leon County, Fla.	357	1	Byrne et al. (1980)
Narragansett Bay, R.I.	167,000	21	Hoffman et al. (1982)

River Discharges

Reexamination of the global input of hydrocarbons to the oceans indicates that the inclusion of a separate category for river discharges may be improper because of double accounting of hydrocarbon input. The major sources of hydrocarbons in rivers are the untreated and treated wastewater discharges, runoff (both urban and rural), and spills. All these sources are quantified and reported separately for coastal areas. If an additional 110 million people discharge PHC into the interior rivers of the United States (at a rate of 6.8 g/cap/d) and if 5% of these PHCs eventually reach the oceans, then this yields an annual flux of PHC from rivers to U.S. coastal waters of 0.013 mta. Assuming this amount is one-third of the world total, the river discharge of PHC to the ocean would be 0.04 mta.

OCEAN DUMPING

Some hydrocarbons are discharged into U.S. and world coastal regions in association with municipal wastewater treatment plant sludge/underflow. The sludge is generally discharged from dumping by barge or by discharges through pipelines. In the United States, this sludge is discharged by dumping in the New York Bight and by pipeline on the West Coast. In the New York Bight, approximately 7×10^6 wet tons of sludge are discharged per year. This material contains approximately 2,000 ppm of oil and grease, of which about 40% are hydrocarbons. This

TABLE 2-21 Per Capita Estimates of PHC Contributions in Urban Runoff

Location	Unit PHC Contribution (g/cap/d)	Reference
Philadelphia and Trenton	0.03	Whipple and Hunter (1979)
Narragansett Bay	2.7	Hoffman et al. (1982)
Los Angeles[a]	1.9	Eganhouse and Kaplan (1981)
Seattle	0.3	Wakeham (1977)
Sweden[b]	0.3	NRC (1975)

[a]Single storm extrapolated to annual runoff by author.
[b]Typical urban area (0.2 parking, 0.3 multifamily, and 0.6 single family).

amounts to 0.006 mta of THC. In addition, the Los Angeles pipeline discharges about 2,450 tons of oil and grease annually through the 7 mile sludge outfall (Eganhouse and Kaplan, 1981). This is estimated to be 0.001 mta of THC.

The annual worldwide discharge of wastewater sludge into the oceans is approximately 16 million tons. Thus, applying a similar ratio to that used for the United States, the total amount of hydrocarbons discharged worldwide by ocean dumping is about 0.02 mta.

Hydrocarbons are also released to the oceans from the dumping of dredge spoils. Dredge spoils are river and channel sediments that have been relocated by dredging and dumping operations. The hydrocarbons that accompany these spoils are accounted for in other sections of this report and are not included in the ocean dumping category.

GEOGRAPHICAL DISTRIBUTION OF INPUTS

The input of petroleum hydrocarbons into the ocean is certainly not distributed evenly. The geographical distribution of the inputs from each source is discussed below.

- Marine transportation (1.5 mta). The input of PHC from this source is concentrated along the principal transportation routes and in harbors and ports where oil tankers or other vessels are loaded or unloaded. About half the transportation total is derived from tanker operations (0.7 mta). Most of this loss is probably at sea along the prominent tanker routes from the Middle East to Europe, the American

continents, or the Far East. Another major source in this category is tanker accidents (0.4 mta). These also tend to occur along the tanker routes, but in more congested areas near ports or in narrow straits. The third major source, that of bilge and fuel oils (0.3 mta), probably follows a similar distribution pattern to that of the tanker operations.

- Offshore oil production (0.05 mta). This relatively minor input occurs at offshore oil production facilities, and these tend to be near coastlines. The largest offshore producing areas are the Arabian Gulf, the North Sea, the Gulf of Mexico, offshore California, offshore Malaysia and Indonesia, and the west coast of Africa.
- Refineries (0.1 mta). This input of PHC into the sea is concentrated near the coasts of countries that do most of the refining of petroleum (e.g., the United States, Great Britain, Germany, France, Japan, Canada, Mexico, Kuwait, and Saudi Arabia).
- Nonrefinery wastes (0.2 mta). This input into the sea is concentrated near the coasts of the more industrialized nations in the world, such as the United States, the northern European countries, and Japan.
- Municipal wastes (0.75 mta). This input of PHC is distributed in much the same way as the nonrefinery industrial wastes. It would be concentrated near the coasts of the more highly industrialized and heavily populated nations. Best examples would again be the United States, the northern European countries, and Japan.
- Urban runoff (0.12 mta). This input of PHC closely follows the input from municipal wastes. The input would be primarily into coastal areas of countries with high industrialization and large populations.
- River runoff (0. 04 mta). This input is in coastal areas near the mouths of large rivers, such as the Mississippi, the Rhine, the Danube, the Saint Lawrence, and the Elbe.
- Natural sources (0.3 mta). Submarine seeps, at least those identified thus far, seem to be associated with tectonically active regions of the world and are usually near the coasts of continents. Such areas are offshore California and Alaska, the Arabian Gulf and the Red Sea, the northeast coast of South America, and the South China Sea.
- Atmosphere (0.05-0.5 mta). This input of PHC into the seas would be primarily downwind of heavily industrialized areas. Again, the inputs are greatest near the coastlines, with concentrations decreasing away from the coasts. The northwest Atlantic, the North Sea, and the northwest Pacific (near Japan) would probably have typically large atmospheric inputs of PHC.

Data are not available to estimate total PHC input by region except in an extremely qualitative manner. If one looks at information on the geographical distribution of each input, then one can say, qualitatively, that coastal areas off the United States, Europe, and Japan and the Arabian Gulf would probably have greater inputs.

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SUMMARY AND RECOMMENDATIONS

The estimated range for total input of petroleum from all sources is 1.7-8.8 million mta. The best single-number estimate of total input is 3.2 mta. We believe that the range is a more accurate summary of the state of knowledge than a single-number best estimate. Uncertainties are particularly evident with certain sources, i.e., natural inputs (seeps and erosion), transportation, municipal/industrial runoff, and atmospheric inputs. There are also wide geographical gaps in information on sources, especially in the southern hemisphere. Table 2-22 presents sources, probable ranges, and best estimates for sources. The spread in probable range about the best estimate is a qualitative measure of the faith in the best estimate. For example, the tanker accident probable range is narrow (0.3-0.4 mta), so the best estimate is probably good. On the other hand, the marine seep probable range is wide (0.02-2.0 mta), indicating small reliability in the best estimate.

The 1975 NRC report gave only a single-number estimate of total input of petroleum, namely, 6.1 mta. No range was given. This number falls within the current estimated range of 1.7-8.8 mta. The difference in the two single-number estimates, 6.1 mta in 1975 and the current 3.2 mta, does not necessarily reflect a significant decline in input but indicates better estimation of individual inputs.

Although the amount of petroleum and petroleum products transported by sea, as well as crude oil produced offshore, has increased during the past 8 years, PHC input into the marine environment estimated at the 1981 NRC workshop does not appear to have followed this trend. This may be for the following reasons: (1) the individual input estimates are more accurate due to improved analytical data on PHC concentrations in effluent streams, (2) positive steps have been taken to reduce operational and accidental release of petroleum into the sea, and (3) double accounting of PHC inputs from sources has been reduced. Double accounting arises when it becomes difficult to distinguish PHC inputs from closely related sources (e.g., urban runoff, river runoff, industrial and municipal wastes). Thus, there may be the tendency to count the same PHC inputs twice or more times under different sources.

One source of PHC into the marine environment that was not estimated was PHC released from pleasure craft, primarily in near-coastal marine waters. Pleasure craft are primarily small inboard or outboard motorboats. While inputs from pleasure craft may be locally significant, we believe that the total amount of this input would not be on the same scale with the other inputs considered.

Major problems still remain in the estimation of PHC inputs into the marine environment. Certainly, significant improvements have been made in recent years in obtaining better analytical data on concentrations of PHC entering the marine environment from varied sources. However, additional work is still needed, particularly in the acquisition of improved data on PHC inputs from the atmosphere, from municipal and industrial waste sources, and from natural sources such as marine seeps and erosion of terrestrial sediments.

Following is a list of recommended research programs or projects that would address these problems:

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TABLE 2-22 Input of Petroleum Hydrocarbons Into the Marine Environment (mta)

Source	Probable Range	Best Estimate[a]
Natural sources		
Marine seeps	0.02-2.0	0.2
Sediment erosion	0.005-0.5	0.05
(Total natural sources)	(0.025)-(2.5)	(0.25)
Offshore production	0.04-0.06	0.05
Transportation		
Tanker operations	0.4-1.5	0.7
Dry-docking	0.02-0.05	0.03
Marine terminals	0.01-0.03	0.02
Bilge and fuel oils	0.2-0.6	0.3
Tanker accidents	0.3-0.4	0.4
Nontanker accidents	0.02-0.04	0.02
(Total transportation)	(0.95)-(2.62)	(1.47)
Atmosphere	0.05-0.5	0.3
Municipal and industrial wastes and runoff		
Municipal wastes	0.4-1.5	0.7
Refineries	0.06-0.6	0.1
Nonrefining industrial wastes	0.1-0.3	0.2
Urban runoff	0.01-0.2	0.12
River runoff	0.01-0.5	0.04
Ocean dumping	0.005-0.02	0.02
(Total wastes and runoff)	(0.585)-(3.12)	(1.18)
TOTAL	1.7-8.8	3.2

[a]The total best estimate, 3.2 mta, is a sum of the individual best estimates. A value of 0.3 was used for the atmospheric inputs to obtain the total, although we well realize that this best estimate is only a center point between the range limits and cannot be supported rigorously by the data and calculations used for estimation of this input.

1. Improved methods should be developed for large scale, areal documentation of the continental margins to determine the extent of submarine seepages of petroleum. A program should be undertaken to gauge accurately flow rates for seeps of significantly different sizes, including probable microseeps.

2. There should be continued monitoring of all facilities discharging low levels of petroleum hydrocarbons dispersed or dispersed in

aqueous effluents (e.g., offshore platforms, refineries, and other industrial plants and transportation units such as tankers and terminals).

3. Rain samples collected from several locations on the ocean and near sea coasts should be analyzed for PHC content. This work is important since rain scavenging of atmospheric particles is believed to be the major pathway for petroleum into the ocean from the atmosphere. It is also necessary to determine reactions of, and changes occurring in, various petroleum components as they are transported from sources through the atmosphere across and into the oceans.

4. More applied investigations, including accurate measurements of PHC, are needed to better define municipal, industrial, and runoff inputs to the oceans. This is particularly needed in southern hemisphere countries. These investigations may lead to quantitative methods for distinguishing petroleum hydrocarbons from oil and grease and natural hydrocarbons found in municipal and industrial waste as well as samples of runoff.

5. Data should be collected on the C_2–C_{10} aliphatic hydrocarbons in vapor, particulate, and rain samples from over the oceans, to relate these to the distributions of other classes of organic compounds present in petroleum.

6. Better solubility data are needed for n-alkanes and polynuclear aromatic hydrocarbons to better ascertain the importance of rain scavenging of gases and air-sea gas exchange processes to the contribution of the flux of atmospheric petroleum hydrocarbons to the ocean.

7. There is a need to determine the reactions and organic compound class distributional changes that occur for the various organic compounds in petroleum, as this material is transported from its source through the atmosphere across the oceans.

8. Better solubility data are needed for n-alkanes, polynuclear aromatic hydrocarbons, etc., to better ascertain the importance of rain scavenging of gases and air-sea gas exchange processes to the contribution of the flux of atmospheric petroleum hydrocarbons to the ocean.

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PREPARED STATEMENT OF KENNETH W. GIDEON

Mr. Chairman and Members of the Committee: I am pleased to have this opportunity to present the views of the Treasury Department regarding the tax implications of two bills dealing with the serious and recurring problem of spills of crude oil and other products upon our nation's waterways. I will start by discussing S. 1066, which proposes to set up a cleanup fund as part of a comprehensive oil spill act. I will then turn to S. 771, which would disallow deductions for costs incurred in a cleanup program not found to be in good faith compliance with certain federal standards.

S. 1066

The Administration strongly supports S. 1066, which would enact the Comprehensive Oil Pollution Liability and Compensation Act of 1989. S. 1066 has several components designed to achieve a number of important goals, including assurance of fiscal responsibility of crude oil shippers, implementation of international conventions on oil spills, and activation of the Oil Spill Liability Trust Fund. Today I would like to address the provisions concerning the oil spill financing rate (the "fee") and the Oil Spill Liability Trust Fund (the "Fund"). I would like to start by briefly reviewing the purposes of the Fund before turning to the amendments to the Internal Revenue Code of 1986 (the "Code") proposed by the bill.

Under S. 1066, the Fund would consolidate the functions of a number of separate oil spill funds that have been established over the years. The Fund would be available to cover costs of cleanup and natural resource restoration which exceed the liability limits of the polluter. The Fund would also provide a source of immediate money for such operations and would seek to recover these amounts from liable polluters up to their liability limits. In cases where a polluter proves financially unable to satisfy its liabilities, the Fund would end up bearing all or part of the cost of cleanup. Thus, the Fund would constitute a measure of insurance, spreading the risk and providing a savings fund for any future spills.

The bill provides three separate sources of money for the Fund. Initially, the balances in two existing cleanup funds (the Offshore Oil Pollution Compensation Fund and the Deepwater Port Liability Fund) are to be rolled into the Fund when it becomes operational. The balance in these funds is approximately $152 million. Secondly, the Fund is to receive the proceeds from a 1.3 cent per barrel fee to be levied upon all domestic and imported oil. We estimate that the fee would generate revenue to the Fund of $296 million, assuming an effective date of July 1, 1989 and a termination date of June 30, 1994. Thirdly, the Fund would recoup cleanup and restoration costs from liable polluters.

I would like to now turn to the provisions of the Internal Revenue Code that would be affected by S. 1066. The 1.3 cent per barrel fee that would be collected under the bill is found in section 4611(c) of the Code. It was enacted by the Omnibus Budget Reconciliation Act of 1986. The fee would be collected on the same base as the Hazardous Substance Superfund fee. Thus, it would be generally imposed on all crude oil received at a US refinery, domestic crude oil used in the United States or exported before received at a US refinery, and upon imported petroleum products. A credit against a taxpayer's liability under Code section 4611(c) is provided by Code section 4612(d) for amounts paid by the taxpayer prior to January 1, 1987 to the Offshore Oil Pollution Compensation Fund and the Deepwater Port Liability Fund. Code section 9509 establishes the Fund as part of the Trust Fund Code, a subtitle of the Internal Revenue Code.

S. 1066 would make four changes to the provisions of the Internal Revenue Code which currently control the fee and the Fund. First, under current law, the Code section 4611(c) fee is scheduled to expire at the end of 1991. However, that termination date was selected in 1986, meaning that as originally enacted the Fund would receive revenues from the fee for approximately five years. Since the bill would start collection of the fee 30 days after enactment, the bill extends the termination date of the fee to June 30, 1994. The purpose of the extension is to ensure that, assuming timely enactment, the Fund receives approximately the amount of revenues contemplated in 1986 when the Fund was established.

Second, S. 1066 would amend Code section 9509(c)(1), which currently contains specific rules concerning the uses of amounts in the Fund. S. 1066 itself contains rules governing the uses of the Fund. It would be confusing and unnecessary to have two sets of rules governing the permissible uses of the Fund. Therefore, the bill amends Code section 9509(c)(1) to provide that the amounts in the Fund may be used only for purposes specified by the bill.

Third, S. 1066 modifies Code section 9509(c)(2), which provides limitations on expenditures by the Fund. Under current law, there is a maximum of $500 million per

incident. The bill would empower the President to waive this limit if he determines it is necessary and in the best interests of the country. Also, Code section 9509(c)(2)(B) currently limits natural resource damage assessments and claims to $250 million per incident; this limitation would be deleted under S. 1066. The *Exxon Valdez* spill has demonstrated that natural resource restoration costs can be very large; thus, the Administration does not believe a separate $250 million per incident limit is appropriate.

Finally, under Code section 4611, in its current form, collection of the fee does not commence until 30 days after the passage of qualifying authorizing legislation, defined as any legislation which is substantially identical to certain legislation passed by the House of Representatives during the 99th Congress. The bill is similar in most respects to this prior legislation, and we believe it constitutes "qualifying authorizing legislation" within the meaning of Code section 4611(c). However, to avoid any question as to whether the Act does indeed constitute "qualifying authorizing legislation", S. 1066 amends Code section 4611 to provide that collection of the fee commences 30 days after enactment of S. 1066.

These are the only changes that S. 1066 would make to the Internal Revenue Code. We believe they are generally consistent with the intent of Congress when it initially enacted Code sections 4611(c) and 9509. We also believe this legislation is extremely important, and should be enacted quickly.

S. 771

S. 771 would amend the Internal Revenue Code to disallow a deduction for any costs incurred in a cleanup of a spill of oil or any hazardous substance, unless the Administrator of the Environmental Protection Agency or the Commandant of the Coast Guard certifies that the taxpayer has made a good faith effort to comply with certain Federal laws. The bill would require the Treasury Department to prepare an estimate of the total revenue cost from 1970 to 1987 of deductions for cleanup costs that would not have been deductible under the rules provided by the bill, and would require the Treasury Department to prepare annual reports in future years estimating revenue increases from disallowed deductions. The stated purposes of the bill are (1) that the public should not pay for discharges of oil or hazardous substances, either directly through payment of cleanup cost or indirectly through tax deductions; (2) that those injured by discharges of oils or hazardous substances should be fully compensated; (3) that all ecological damages from a discharge should be mitigated; and (4) that a taxpayer should receive a tax deduction only if the cleanup meets federal standards. The bill also states its intention that any increase in federal revenues attributable to disallowed deductions should be dedicated to cleanup of environmental damage.

We strongly oppose this bill for several reasons. The bill would violate the fundamental principle of business taxation that a taxpayer's ordinary and necessary business expenses may be deducted in computing net income. Expenses incurred in cleanup of an oil spill satisfy this standard. If a taxpayer fails to satisfy applicable federal regulations, then the penalty should be determined under and imposed by those regulations. The denial of all deductions might bear little or no relation to the severity of the violation. Denial of a deduction to a taxpayer who refused to spend any money on a cleanup would be a meaningless sanction. On the other hand, a taxpayer who spent large sums in a cleanup effort that was determined after the fact not to constitute a "good faith effort" to satisfy federal standards would be denied a deduction, thereby imposing a significant disincentive to incur any cost at all if it is feared that the expenditures will be inadequate. Although we fully agree that cleanup of spills should be conducted in accordance with federal rules, we do not believe those rules should be inserted into the tax code.

We believe that the objectives of S. 771 would be better achieved by enactment of S. 1066. We also believe that the provisions of S. 771 will result in undue complexity. A taxpayer would frequently be unaware of whether deductions were allowable at the time the tax return was filed, requiring amended returns. Taxpayers would be required to list disallowed expenses on a separate form. Such expenses would apparently be broadly defined, resulting in controversy over whether an expense was part of cleanup costs. Furthermore, the bill would require the Treasury Department to prepare an estimate of the total revenue cost from 1970 to 1987 of allowing deductions for cleanup costs, and would require the Treasury Department to prepare annual reports in future years estimating revenue increases from disallowed deductions. We believe that these provisions would result in unnecessary complexity and effort for taxpayers and the government.

For these reasons we oppose the enactment of S. 771. This concludes my prepared remarks. I would be glad to answer any questions.

PREPARED STATEMENT OF SENATOR JOHN HEINZ

Mr. Chairman, the tragic Alaskan oil spill, like the much smaller but serious Pittsburgh oil spill last year, demonstrates that our communities and our environment are extremely vulnerable to these kinds of accident. If any good has come out of the Alaska disaster, it can be found in the growing awareness of the American people and the congress to the threat of oil spills, and to the need to take action to prevent accidents and, should they occur, to be far better prepared to cope with them.

Over 10,000 sea otters and more than one million birds have been endangered by the Alaskan oil spill. The area's major fisheries are threatened, as are the livelihoods of Alaska's fishermen. The oilslick has contaminated more than 400 miles of Alaskan shorelines, including beaches in Katamai and Kenai Fjords national parks, and other beaches up to 525 miles away from the wreck site.

It is my belief, especially in light of this tragedy, that Congress should take strong steps to prevent these disasters from occurring, either in our oceans or on our inland waterways. The committee has before it today two measures which could help fulfill the commitments congress undertook in 1986 when we established an oil spill liability trust fund, but delayed its effectiveness subject to authorizing legislation.

The first, Senator Chafee's proposal which was introduced on behalf of the administration, would allow the trust fund, and the excise tax of 1.3 cents per barrel on crude oil, to become effective within 30 days of enactment. It would allow the president to waive the 500 million dollar limit per incident and impose a higher limit upon the determination that such was in the best interests of the Nation. The measure also establishes a thorough-going system of liability, and no claim would be paid by the trust fund until it had first been applied to the responsible party.

Also before the committed is Senator Reid's proposal to disallow a business expense reduction for clean ups until EPA certifies that the responsible party has made a good faith effort to comply with the clean water act and/or superfund, if applicable.

Both of these measures deserve the committee's full attention and I commend the sponsors for their efforts. It has been nearly 3 years since we first authorized a liability trust fund, and we must proceed.

We have before us, Mr. Chairman, an outstanding panel of witnesses and I am looking forward to their testimony.

PREPARED STATEMENT OF PAUL R. HUARD

I am Paul R. Huard, Vice President of the Taxation and Fiscal Policy Department of the National Association of Manufacturers. I am pleased to here today to present the views of our members on the tax provisions of S. 771, the "Oil Spill Bill." Broadly stated, the provisions upon which NAM wishes to comment would deny Federal income tax deductions for the costs of cleaning up oil spills and certain hazardous substance discharges if the taxpayer failed to comply with federally-mandated clean-up standards. NAM is unalterably opposed to this type of legislation first, because it is had tax policy, and second, because it would discourage the very conduct that it seeks to promote.

NAM believes all proposed changes in the nation's revenue laws should be evaluated pursuant to certain basic principles. Among these are the following:

—The taxing power should he used for the principal purpose of raising revenue.
—Simplicity and stability should be important goals of the tax structure.
—Taxation should not impede the international competitiveness of U.S. companies.
—As applied to business taxpayers, the income tax should he a tax on net income.

S. 771 would violate all of the foregoing basic principles of good tax policy.

Broadly applied, the logic of S. 771 would convert the Federal income tax from a system primarily intended to raise government revenue to an alternative enforcement mechanism for the nation's thousands of nontax regulatory statutes. The average business today is probably subject to dozens if not hundreds of Federal, state and local laws mandating compliance with certain standards. In the ordinary course of events, a certain number of businesses-many of which may have acted in total

good faith—will he out of compliance with one or more such standards. Under the rationale of S. 771, carried to its logical conclusions, the Federal income tax laws would become a device for imposing sanctions on such noncompliance, by denying deductions for expenses and losses incurred in connection with the noncomplying activities.

Such a scheme carries with it the potential for enormous mischief. For example, even a minor infraction in relation to an expensive activity could result in total disallowance, thus imposing a punishment wholly disproportionate to the offense. ether extremely troublesome feature of the concept embodied in S. 771 is that it would involve nontax agencies of the Federal Government in the administration of the Internal Revenue Code. Further, because the burden of proof in tax disputes is typically adverse to the taxpayer, businesses could lose valuable due process protections they would otherwise be entitled to if, instead of a back door approach through the tax laws, the government proceeded against the alleged noncompliance under the penalty provisions of the regulatory statute in question.

In our view, tax provisions in the nature of penalties should he used only to encourage compliance with the tax laws and to punish noncompliance with such laws. Use of such provisions as an alternative enforcement mechanism for nontax statutes is, for the reasons outlined above, an extremely dangerous precedent which we urge this Committee to reject completely.

While we believe the foregoing deficiencies are by themselves sufficient to warrant abandonment of S. 771, there are yet other reasons why legislation of this type is just plain had tax policy.

1. It would further complicate and destabilize a tax system which already is excessively complex and notoriously unpredictable. Business planning and the correct determination of tax liability are difficult enough under the byzantine tangle of income tax provisions already in effect, a difficulty that in this decade has been greatly exacerbated by the tendency of the Congress to indulge in major revisions of the tax laws on a nearly annual basis. We do not need to make this situation worse with ad hoc responses to each sensational accident or other incident that is susceptible to the approach taken in S. 771. Moreover, the open-ended statute of limitations under S. 771 makes it virtually impossible to achieve any finality in the determination of tax liability for past years, a situation universally viewed as undesirable by taxpayers and tax administrators alike.

2. It would adversely affect the international competitivess of U.S. firms. While the short notice given for this hearing did not permit detailed research, our preliminary review indicates that none of our industrialized competitors imposes deduction disallowances similar to those in S. 771. Given our existing trade deficit situation, we certainly should not be taking actions that will worsen the competitive posture of U.S.-based businesses.

3. It would further erode the long-standing concept of the Federal tax on business income as a tax on net income, i.e., on gross income less all costs incurred in producing such income. This sound concept has been weakened in recent years by ill-conceived approaches such as imposing percentage limitations on certain types of business expense deductions. This process, if continued, will ultimately convert what is now still largely tax on net income to a tax on gross business receipts which, given the wildly differing profit margins of various types of businesses, is in our view a singularly inappropriate and unfair basis for levying taxes.

Finally, NAM is seriously concerned that the approach taken in S. 771 would discourage businesses from taking prompt, positive actions in response to industrial accidents. Because the sanctions of S. 771 are so draconian, a likely response is that taxpayers involved in oil spills or hazardous substance discharges will undertake very little cleanup activity on their own initiative, and instead will choose to protect the deductibility of their expenditures by awaiting specific directions from the applicable government agency.

For all of the reasons outlined above, NAM urges the Committee on Finance to reject S. 771.

This concludes my prepared testimony. I will be glad at this time to respond to any questions members of the Committee might have.

Prepared Statement of Hon. William O. Lipinski

Mr. Chairman, I thank you for the opportunity to speak on behalf of S. 771, the Oil Spill Bill. As you know, I have introduced identical legislation, H.R. 2532, in the House.

This bill will benefit both the environment and the taxpayers. It will provide long-overdue incentives for companies to follow existing laws and to clean up oil and toxic chemical spills.

The Oil Spill Bill will make a simple change in the Internal Revenue Code which will end the automatic deductibility of cleanup costs.

Watching the response to the Exxon oil spill in Alaska, we can see that current law allowing cleanup costs to be deducted as "ordinary and necessary business expenses" is simply wrong. Oil and toxic spill clean up is not "ordinary" and is not a "necessary" business expense. These cleanup expenses should not qualify as a routine "cost of doing business in America." The spill in Prince William Sound has been a profound lesson in unnecessary and extraordinary negligence.

Under the tax code as it now stands, Exxon is entitled to deduct 34% of its cleanup expenses from taxable income. Original estimates projected the cost of clean up at over $600 million. More recent cost estimates have been as high as $1 Billion. Coast Guard commandant Paul Yost testified earlier this week that Exxon is spending $100 million a week on the cleanup effort. Even with almost $600 million covered by insurance, the projected tax break for Exxon alone could easily top $50 million.

PREPARED STATEMENT OF TIM MAHONEY

Mr. Chairman, I am Tim Mahoney, Washington Representative of the Sierra Club, a conservation organization of 500,000 members. Our members, including our Alaska Chapter, are greatly concerned with environmental impacts of efforts to produce and transport crude oil in Alaska and other U.S. waters.

The recent disaster in Prince William Sound, Alaska points up the danger of proceeding without a coordinated Federal policy. While nothing can minimize the environmental disaster of the Prince William Sound spill, it did occur in a state with oil spill liability laws. We are extremely critical of the Federal Government's uncoordinated response, which was marked by a willingness to let Exxon take charge of every aspect of spill recovery and restoration, because the Federal Government had no money. This would be akin to telling local fire departments and timber companies to fight the Yellowstone fires last summer. Why can we fight fires when we have no appropriated funds, but we cannot coordinate a cleanup of toxic crude oil over hundreds of miles of water and coastal wilderness? And relying on the oil companies to prepare their own response system is akin to letting the savings and loan industry reform themselves.

Sierra Club supports strong, comprehensive oil spill liability legislation. We believe that the best vehicle to use as a starting point is S. 686, the Mitchell bill. Like all Americans, our members have been shocked, saddened, and angered by the massive Prince William Sound spill. Like you, we are still assessing information from the Prince William Sound tragedy and trying to apply the necessary lessons to help this legislation and other measures related to oil production, transportation, and the protection of special places. We are hopeful that through information gained by various investigations of the *Exxon Valdez* incident, we may be able to work with this Committee to improve on legislation, to make spills less likely, allow more comprehensive restoration of habitat, and more fairly place penalties on the polluters.

Philosophically, the Sierra Club believes in a strict liability system in all pollution law, where the polluter pays. We recognize that such an approach is not always completely attainable in practice. Hence, the Sierra Club supports a large Oil Spill Liability Trust Fund of at least $1 billion. This only works if we can design a system for assessment of damages that accurately reflects values society places on natural resources, beyond mere commercial values or minimum restoration costs. We believe costs associated with the *Valdez* spill may underestimate true values. And while we may not realize assessed costs under this incident for many years, the fund should be large enough to pay for a spill of at least this magnitude. There should be no limitation on liability in a particular incident.

We support restructuring of the tax code along the lines of S. 771, the Reid bill, so that payments by a polluter are not treated as tax deductible business costs and thus, are not indirectly subsidized by the Federal government. Sierra Club opposes pre-emption of state pollution laws, penalties or funds which may more accurately reflect conditions, values, and changing circumstances in a locality. We believe that following the Alaskan spill, other states may reassess and redesign their own programs and should not be discouraged or stifled by Federal law.

We would be happy to provide additional, detailed information for the Committee and to work with the Committee and its staff on the development of legislation. We

appreciate the opportunity to testify today in the hope that if important lessons can be learned from the tragedy in Alaska, our environment may benefit in the long term. Thank you.

PREPARED STATEMENT OF PAMELA A. MILLER

Mr. Chairman, members of the committee and others: My name is Pamela A. Miller. I am the Alaska Legislative Representative for the National wildlife Federation, the largest conservation group in the United States, with over 5.8 million members and supporters. The National Wildlife Federation has a long standing concern for improving the oil spill law. We have been disappointed by the stalemate between the House and Senate over this issue for the past few years. If there can be any silver lining to the *EXXON Valdez* spill, we hope it is a better, stronger oil spill liability and compensation law. I speak to you from first hand knowledge of Alaska. As a wildlife biologist in Alaska for seven years, I studied the impacts of oil exploration and development on the North Slope for the U.S. Fish and Wildlife Service and studied birds in the pristine tundra of the Arctic National Wildlife Refuge. As a seven year resident of Alaska, I walked the shores of Prince William Sound, Katmai National Park and Kenai National Park where oil from the tragic *EXXON Valdez* spill continues to this day to wash onto new beaches.

Our need for comprehensive oil spill liability and compensation legislation has become shockingly apparent as the *EXXON Valdez* disaster has unfolded. We need a strengthened Federal Oil Spill Trust Fund so that government can respond more effectively in the future than it has in Prince William Sound. Trustees of the natural resources must be able to get to the scene immediately to assess short-term and long term spill impacts, and not worry that there might not be funds to cover their work. Critical weeks must not be allowed to go by, with biologists sitting in their offices instead of conducting studies in the field, while millions of migratory birds fly north through the oil, and bald eagles feed on oiled carcasses.

We need comprehensive oil spill legislation, but we also need strong laws which will make real improvements over existing laws. We appreciate the efforts of the administration to end the long-running stalemate between the Senate and the House with their bill offered by Senator Chafee (S. 1066). However, we believe the administration bill (S. 1066) needs significant strengthening to be acceptable, although we support the Administration's incorporation of implementation of the International Protocols into the comprehensive legislation. Senator Mitchell's S. 686 is better but was crafted before the EXXON spill and has some major omissions. We believe the Mitchell bill needs fewer improvements than the Administration bill to meet the goals of improved compensation for oil spill victims, including property damage and loss of income, and natural resource damage assessment and compensation, while also providing quick, effective cleanup.

We also need changes in the tax structure as Senator Reid has proposed in S. 771, so that the oil industry cannot simply deduct the costs of cleanup and restoration work as usual business expenses, at the public's expense. Senator Reid's bill provides a better mechanism for internalizing these costs to industry, and should serve as an incentive to avoid spills.

In light of the Committee's jurisdiction, I will first describe our concerns with the size of the Fund and changes needed in the Internal Revenue Code. Later I will outline other major concerns with the Administration bill in the areas of uses of the fund, natural resource damage assessment, increasing liability for revenues, profits and earning capacity and restriction of administrative adjustments, and narrowing the defenses to liability and strengthening penalties.

INCREASE THE SIZE OF THE FUND TO $1 BILLION AND MAKE THESE CHANGES IN THE INTERNAL REVENUE CODE

The proposed amendment in S. 1066 to Section 9509(c)(2) of the Internal Revenue Code currently provides for a $500 million per incident expenditure limitation from the fund, as does the Mitchell bill. We believe this should be raised to $1 billion. Furthermore, we agree with the proposal in S. 1066 that the President should have the authority to waive this limit and impose a higher one if necessary. Section 9509(c)(2) of the Code currently limits natural resource damage assessments and claims to $250 million. From the *EXXON Valdez* spill we have learned that massive damage can be done to the environment from a single spill; thus this limitation should be eliminated.

The Oil Spill Liability Trust Fund financing rate in Section 4611 should be increased from 1.3 cents a barrel to at least 2 cents a barrel until the Fund reaches

the maximum limit. Instead of stopping the tax when the Fund reaches $300 million as under current law, the tax should continue until the fund reaches $1 billion. At that point, the tax could be suspended, but not terminated as the law presently calls for. The taxing mechanism should automatically be reinstated whenever the Fund balance drops below $1 billion, or has payments outstanding. Additionally, the Fund should be able to borrow up to a maximum of $1 billion, instead of only $500 million, if necessary.

Contrary to the provisions in S. 1066, but as proposed in S. 686, all funds remaining in the Trans-Alaska Pipeline Liability Fund after payment of all claims should be transferred to the spill fund, not rebated to the oil companies. Adding this provision to Section 9509(b) would complete the consolidation of existing oil spill funds, including the Deep Water Port Liability Fund and the Offshore Oil Pollution Compensation Fund into the new Fund. The TAPS fund contains significant unexpended monies and there are still high risks for future catastrophic as well as chronic spills along the routes travelled by tankers carrying North Slope crude oil.

Perhaps most alarming in the tax code (Section 4611(f) is the language on what constitutes "qualified authorizing language." This needs to be changed so that instead of calling for a law "substantially identical" to certain subtitles of H.R. 5300 of the 99th Congress, it references more generally the enactment of comprehensive Federal oil spill liability and compensation legislation.

Uses of the Fund: S. 1066 should be changed to incorporate these uses of the Fund: (1) where the source of the discharge of oil is not known or cannot be identified, and (2) the costs of assessing both short-term and long-term injury to, destruction of, or loss of any natural resources resulting from a discharge of oil. Similarly, Subsection 9507(c)(1)(A)(ii) of the current Internal Revenue Code should be amended to allow trustee recovery from the Superfund for natural resource damage assessments. A recent House hearing focused on the urgent need to make this technical change.

State preemption: We're heartened that the Administration has recognized the need to continue to allow States to have their own oil spill liability and compensation legislation, but fail to see why jurisdiction should be restricted to Federal courts, as State courts would be more familiar with State law. We prefer the broader approach on pre-emption that the Mitchell bill takes, except to the extent that pre-emption may be necessary to satisfy the requirements of the International Protocols. We believe that oil spill legislation should follow the precedent of other major environmental laws such as the Clean Air Act and Clean Water Act which allow states to establish stronger laws than the Federal ones.

Strengthen natural resources damages coverage: Under the existing damage assessment rules, the Interior Department has calculated the value of a fur seal as a mere $15 and similarly undervalues or gives no value to a myriad of other resources lost in a spill. Procedures for natural resource damage assessment should be redone by the National Oceanographic and Atmospheric Administration, in consultation with the Environmental Protection Agency, U.S. Fish & Wildlife Service and other agencies. There should be some mechanism for State involvement in this process and in determining damages.

The administration bill does not clearly specify that the Fund shall be used by the Trustees for natural resource damage assessments. These costs, as well as those for assessing and payment of damages for lost uses of natural resources need to be covered by the Fund. S. 1066 specifies that monetary value of the loss of use of injured, destroyed or lost natural resources may not be recovered from the Fund. While we agree if natural resources have been destroyed and cannot be restored or replaced and no equivalent for it may be acquired, a stiff civil penalty is appropriate. However, bill's proposal that a determination shall be "within the complete and unreviewable discretion of the trustee" is unacceptable. This major loophole should be deleted. Moreover, the $10 million cap on penalties is grossly inadequate.

Increase liability for revenues, profits and earning capacity, and restrict administrative adjustments. The Senate should make it clear that there are no arbitrary cutoffs or limitations on spill related claims. S. 1066's limitation on governments recovering lost taxes, revenues, etc. "for a period not to exceed one year" should be deleted, and damages for impairment of profits and earnings should not require that at least 25% of one's income be dependent upon such activities. The liability caps are far too low and should be substantially increased or eliminated. A major accident at an offshore facility could result in costs far greater than what we may even see with the *EXXON Valdez*. Liability limits should not be amenable to administrative adjustment downward, but limits for vessels should be consistent with the International Protocols.

Narrow the defenses to liability and strengthen penalties. Spillers should not be allowed to use defenses or standards of negligence that protect them from broadly defined irresponsible behavior. The bill's exceptions to liability limits—the standards used to determine whether the spiller should bear full (unlimited) liability—should be broadened by striking the words "gross" and "within the privity or knowledge of." Civil and criminal penalties in the bill should be substantially strengthened and increased. Penalties should be increased to a minimum of $50,000 per day for each discharge.

In conclusion, we need a strong oil spill liability and compensation law. We need stronger oil spill contingency planning for better prevention and response to spills than is currently required by the inadequate National Contingency Plan. And finally, we need to recognize that even with the best contingency plans and liability funds, there are sensitive areas such as the Arctic National Wildlife Refuge where the risks of oil exploration and development are so high that it should not be allowed. Thank you.

PREPARED STATEMENT OF SENATOR HARRY REID

Mr. Chairman, today's hearing on oil spill legislation represents another step toward enacting measures that will prevent or, at least, minimize, tragedies such as that experienced in Alaska's Prince William Sound.

I commend your attention to this issue, and appreciate the opportunity to speak before the Committee about my proposed oil spill amendment.

To place things in the appropriate context, let me briefly trace the chain of events by which this amendment developed.

On April 13, I introduced S. 771, the *Oil Spill Bill* because Exxon was planning to get a huge tax writeoff for cleaning up the mess they created.

I thought that was wrong—so did millions of Americans and countless Members of Congress, both Democrats and Republicans, from all parts of the country.

As the enormity of the damage to Alaska's economy and environment increased, and questions about Exxon's responsiveness multiplied, I recognized the need to put this bill on a fast track.

I therefore introduced the *Oil Spill Bill* with some modifications, as an amendment to the Supplemental Appropriations legislation.

Despite the support expressed for this measure by many of my colleagues from both parties, I withdrew my amendment so that the committee with jurisdiction over tax policy could hear and consider this relevant matter in greater detail.

Today's hearing should not be the proverbial "end-of-the-line" for my amendment. I intend to emphasize the imperative for enacting this amendment quickly and decisively.

The *Exxon Valdez* aftermath gives us no other choice.

This catastrophic oil spill was much worse than we ever anticipated. The finger of blame points to Exxon, which admittedly was ill-prepared. Their delay and inefficiency in cleaning up the spill turned a local catastrophe into the single-worst environmental disaster in history. This tragedy is compounded by the sinking of an oil skimmer in Prince William Sound just two days ago.

Given the company's dismal clean-up performance, and the resultant permanent scar that now defaces Alaska's beauty, it is incomprehensible that Exxon should be able to claim its clean-up costs—estimated at $500 million—as an *"ordinary and necessary"* cost of doing business.

I do not want to tell my constituents that the American people owe Exxon, the biggest polluter in history, millions of dollars in a tax rebate in return for destroying the environment and raising prices at the gas pumps.

This Committee knows that the American people do not want to be told that either.

It is our responsibility to use the tax code and the IRS to make Exxon and other companies responsible and accountable for their actions.

As one of the authors of the *Taxpayers' Bill of Rights* which became law last year, I am highly mindful of how our country's tax laws are implemented, and how our policies affect the average American taxpayer.

The *Taxpayers' Bill of Rights* represents progress toward a more equitable treatment of taxpayers. But the recent Exxon fiasco turns back the clock on our progress. *Why should the American taxpayer pay for Exxon's clean-up?*

The practice of claiming clean-up expenses as a tax deduction gives corporations absolutely no incentive to be responsive in times of crises. There is not even an incentive to take preventive actions to avoid the occurrence of such tragedies.

My amendment will provide this greatly needed incentive. It will disallow the deduction for cleaning up spills of oil or hazardous substances if the Federal Government certifies that the clean-up has not been conducted in accordance with standards established by the Clean Water Act or Superfund.

The Internal Revenue Service would be notified of the company's deduction ineligibility from the Coast Guard or the Environmental Protection Agency.

My bill will require very little of the IRS. The burden of itemizing clean-up costs lies with the taxpayer. The EPA or Coast Guard is responsible for certifying the clean-up; the IRS is required only to collect taxes. The determination of environmental damage is not transferred to or shared by the IRS.

The proposed tax deduction would also be denied in cases where the spill is the result of negligence or willful misconduct.

Revenues accruing to the Federal Treasury from the lost deduction will be dedicated to the Clean Water Act Fund in the case of oil spills and Superfund in the case of hazardous substance spills.

Taxpayers will have a year to meet tax liabilities arising from the notification to the IRS of their inadequate clean-up efforts.

My amendment also stipulates that companies who do not meet certification standards will be unable to claim a tax deduction for the cost of property lost or damaged as a result of the spill. For example, Exxon could not deduct the cost of salvaging the *Valdez*.

The Oil Spill amendment is a potential revenue raiser. In these times of deficit spending and budget crisis, this amendment could provide sources of greatly needed revenue without any hardship to the American taxpayer. New money, but no new taxes.

Revenue estimates have been requested from the Joint Committee on Taxation. I expect to receive that information soon, and will gladly make it available for your review.

My amendment lifts an unfair burden from the American taxpayer and places it squarely on the shoulders of corporate responsibility—right where it should be.

My amendment will give companies the bottom-line incentive to effectively clean up oil and hazardous waste spills. If companies want to claim the clean-up costs as a tax deduction, they have to *earn* it.

If companies are faced with the prospect of losing a valuable deduction, I believe they will take additional preventive measures so that spills do not occur. The costs for these measures remain deductible under my bill.

Given the many problems that beset Exxon, and the company's admitted lack of a plan to deal with such a disastrous oil spill, Exxon CEO Lawrence Rawls was asked what advice he would give other CEOs facing a crisis of similar magnitude.

His response: *"Have a public affairs plan."*

My amendment might cause Mr. Rawls to change his response, telling other corporate executives that a crisis management plan—not a public relations plan—should be the top priority.

Mr. Chairman, I would like to see this amendment acted upon quickly, whether we consider it as a separate piece of legislation, or included in the Administration's *Comprehensive Oil Pollution Liability and Compensation Act.*

Time is of the essence. We would be fooling ourselves to view this tragedy as a one-time nightmare. Oil and toxic waste spills, like nightmares, are often recurring events.

The Interior Department recently estimated there is a 94 percent chance that a major oil spill will occur off the California coast during the next 30 years. The Lieutenant Governor of California, Leo McCarthy, said, *"It's not a matter of whether we'll see something like this it's when we'll see it."*

If we maintain the status quo, we will continue giving companies tax deductions for their clean-up expenses and related property claims, regardless of the company's responsiveness or negligence.

If we maintain the status quo, we make it clear that the cost of cleaning up catastrophic oil and chemical spills is merely an "ordinary and necessary" cost of doing business.

We cannot, and absolutely should not, accept such actions under the guise of "business as usual." If we do, we forfeit our ability to invoke corporate responsibility—at the tremendous expense of the American taxpayer and the environment.

That is not business as usual—that, Mr. Chairman, is injustice.

My constituents are well aware of this injustice, and have expressed their outrage through a stream of correspondence and more than a few damaged Exxon credit cards that have been severed in half.

In response to the concerns of the American people, and to the problems inherent in the existing tax treatment of oil spills, I ask that you take action.

Adopt my legislation, the *Oil Spill Bill* which will cover both oil and hazardous waste spills; will likely raise revenue; will not measurably increase the IRS workload; and will offer a tremendous tax incentive for companies to clean-up and prevent spills.

I appreciate the opportunity to appear before the Committee today, and will be glad to answer any questions you might have.

I look forward to working with you and the Administration to resolve this most pressing problem.

PREPARED STATEMENT OF ROBERT A. ROLAND

CMA is a nonprofit trade association whose member companies represent more than 90 percent of the productive capacity for basic industrial chemicals within this country. The U.S. chemical industry provides jobs for more than 1 million U.S. workers and continues to be a strong positive contributor to U.s. trade performance. In 1988 exports of chemicals totalled $32.42 billion and in that year exceeded imports of chemicals by $11.43 billion.

We appreciate the opportunity to appear before this committee on S. 771. This legislation would, in general, disallow a deduction for income tax purposes of oil or hazardous substances cleanup costs. These costs would include, but would not be limited to, legal expenses arising directly or indirectly from such discharges, any payments for restitution or damages to injured parties, and any costs required by any applicable Federal law or regulation. The bill provides an exception, however, if the taxpayer can obtain certification from the Environmental Protection Agency or the Coast Guard that it has made a good faith effort to comply with standards of the Clean Water Act for oil discharges and of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) for discharges of hazardous substances.

We have studied S. 771 introduced by Senator Reid of Nevada. We believe it will harm rather than help efforts to protect the environment. It will put people at greater—not less—risk from spills or other accidental discharges of hazardous materials.

All companies—whether in this industry or other industries, whether large or small—should be encouraged, not discouraged from responding quickly and immediately to an accident involving hazardous materials to prevent harm to people and the environment.

Unfortunately, S. 771 would discourage many companies from taking the immediate action experience has shown is necessary to accomplish this result.

Let me say—before going any further—that no matter what the Congress decides in this matter, the membership of CMA will continue to respond quickly to accidents involving its products without hesitation.

Our industry is very proud with good reason of its efforts to prevent accidents and to minimize damage should they occur. We are proud of our record in this area and we are continuously trying to make that good record even better. Perhaps more than others, we appreciate the benefits of quick response to accidents involving hazardous materials and substances.

We also appreciate, perhaps more than others, what the public expects and demands of us. It demands that we do the best that we can to prevent accidents, to do things as safely as we know how. And it demands that when we make a mistake we respond quickly and effectively.

That's the real world that our industry lives in every day. What concerns us about S. 771 is that same real world. In the real world, should this bill become law, we believe many companies responsible for accidental-discharge of a hazardous material—will hesitate. Worse, some may simply decide to sit on their hands and wait for EPA or the Coast Guard to tell them what to do before doing anything.

We are certain Senator Reid and supporters of this legislation did not intend to create this situation when the bill was drafted. But that will be the result in the real world if S. 771 is enacted.

For many years, section 162 of the Internal Revenue Code has provided that taxpayers may deduct for income tax purposes all ordinary and necessary business expenses. Special rules apply to disallow payments of fines, penalties and treble damage payments in the nature of penalties. Under this general rule the cost of cleaning up a hazardous substance discharge is a deductible business expense. Thus, current Federal tax law does not penalize expenditures for prompt and immediate

action to cleanup any discharge of hazardous substances, to confine and, if possible, to mitigate any environmental or property damage arising from the discharge, and to make restitution to those injured or damaged.

Section 162 is consistent with the tax treatment of most of our major trading partners. Based on our information, 17 nations, including most of those in Western Europe and Japan, treat such expenses similarly.

S. 771 should be unacceptable to this committee for yet another reason. The bill creates an unnecessary conflict of interest for the government officials who must enforce the Superfund and Clean Water Acts. The Superfund remedial cleanup process, for example, is expensive, technically difficult, and procedurally complex. In many instances several years may be required to complete cleanup activities at a given Superfund site.

Further, S. 771 creates conflict-of-interest problems for Federal officials. EPA's granting of a certificate immediately following an accidental discharge that the taxpayer has made a good faith effort to comply with CERCLA could later prejudice EPA's overall and long-term responsibilities for cleanup and recovery. Moreover, the Agency also faces a potential financial conflict of interest since under S. 771 the tax dollars attributable to disallowed cleanup deductions would be paid by the Treasury into the Superfund trust fund. In any event, the difficulty created by these potential conflicts under S. 771 can only promote further delay in cleanup and response, add to the work backlog of EPA, and impose additional cleanup costs.

Allowing the deduction does not create a tax shelter. It simply recognizes cleanup costs as additions to expenses that reduce net income. The U.S. chemical industry's long term practice has been to encourage prompt, private response to any discharge or spill of hazardous substances. For many years, we have funded a number of private programs to minimize the damage and loss attributable to these events. Yet, the chemical industry is one of the highest taxed industries in the country.

A recent Price Waterhouse study using Joint Committee on Taxation/Pease-Dorgan methodology concluded that the effective tax rate of the chemical industry was 37.2 percent in 1987. We anticipate that this rate will continue to be near the statutory maximum, notwithstanding the fact that cleanup costs are deductible as ordinary and necessary business expenses under section 162.

The terms of S. 771 would apply to all cleanups of hazardous substance discharges. This, of course, would include those cleanups to which the Clean Water and CERCLA legislation apply. It also would apply to discharges on the taxpayer's own property and to voluntary cleanups of multi-party sites, as well as those undertaken pursuant to RCRA or state authorities. These important cleanup efforts may not be required to meet Clean Water Act or CERCLA standards. Under S. 771, all direct and indirect expenses attributable to such efforts would not be deductible.

The bill would produce an administrative nightmare. It could apply to literally any number of events, most of them involving very minor problems. Delay, paperwork, and time-consuming litigation would be inevitable and costly. Delay represents real cost to the companies involved, even though the deduction may ultimately be allowed.

The resources of government and industry should be directed at minimizing situations that will require cleanup and, when situations do occur, at doing the job as quickly and effectively as possible. We should not expend limited government and business resources to administer penalties and blame through the tax law. Ample statutory authority and administrative means already exist to achieve-those purposes.

Finally, because the potential loss of significant business expense deductions on some major mishaps cannot be foreseen, S. 771 would inject major uncertainties into the costs of U.S.-based production, storage, and transfer of many substances. This bill would, therefore, create a major disincentive to U.S.-based production and provide a relative trade advantage for our foreign-based competitors. This will provide an additional incentive to manufacture outside the United States at a time when our nation continues to run huge deficits in its manufactures trade.

The chemical industry is proud of its record in promoting safe transportation of hazardous materials. On an annual basis, over 99.99 percent of all chemical shipments arrive without incident and the majority of the incidents that do occur are minor in nature.

We are also proud of the private programs that we have undertaken in the public interest to minimize the consequences of incidents involving hazardous substances. A critical element of any hazardous materials response is the availability of timely and accurate information and expertise on how to deal properly with the release. For over 18 years CMA's Chemical Transportation Emergency Center (CHEMTREC)

has provided product specific information to regional, state and local emergency response teams throughout the United States and Canada.

CMA and its member companies actively maintain a leadership role in providing training and assistance to emergency response teams. Over the last two years, over 230,000 state and local emergency responders have taken advantage of CMA's library of training materials. In addition, the chemical industry has provided valuable public service through other initiatives such as the Chemical Awareness and Emergency Response Program and the Chemical Referral Center. CMA is continuing to expand and to improve these programs to meet current and future needs.

This system of private initiative and response to minimize and confine the effects of hazardous materials emergencies has demonstrated its great importance and public value. CMA urges the Committee on Finance, therefore, to continue the deduction for Federal income tax purposes of expenses directly and indirectly attributable to the cleanup of hazardous substances and to reject the tax amendments proposed in S. 771.

PREPARED STATEMENT OF SENATOR TED STEVENS

Mr. Chairman, I appreciate the opportunity to comment this morning on S. 771, Senator Reid's bill to disallow tax deductions for oil and hazardous substance cleanups if the requirements of pertinent laws are not met.

As Senator Reid explained, this legislation—as modified in the amendment offered to the Supplemental Appropriations Bill—would deny tax deductions for cleanup expenses to companies if their cleanup operations fail to meet federally established standards. The resulting revenues accruing to the Treasury would be dedicated to the Clean Water Act Fund in the case of oil spills and to the Superfund in the case of hazardous substance spills.

In addition, the legislation would disallow a deduction for oil spills and other hazardous substance discharges, in cases of negligence or willful misconduct.

I support the concept of this legislation. The costs associated with cleanup of major oil spills are enormous. When a company claims deductions for clean-up costs they are receiving substantial Federal taxpayer support; in effect, they receive a 34 percent taxpayer subsidy for their cleanup effort.

It is only reasonable and fair, Mr. Chairman, that this taxpayer support should not be available when a company fails to comply with federally established cleanup standards.

In addition to basic fairness, this legislation might also provide an additional incentive to companies to fully comply with Federal cleanup standards. If a company has millions of dollars of tax deductions riding on its performance in a cleanup effort. they might be more likely to concentrate their efforts on adherence to Federal cleanup standards

However, while I support the objectives of this legislation, I believe we need to be very careful about the implementation of this concept. Clearly, we cannot have a Tax Code under which required business expenses—and we do require those at fault to clean up spills—are indiscriminately denied. Therefore, we need to be certain that the deduction is allowed or disallowed based upon clear, concise objective standards. I urge this Committee to work with Senator Reid, myself and the other cosponsors to make certain that objective standards are either spelled out in this law or referenced in another statute.

Let me briefly explain what I mean. Under the legislation, the tax deduction for cleanup costs would be disallowed if either the Commandant of the Coast Guard or the Administrator of the EPA notifies the Secretary of the Treasury that the company has failed to comply with clean-up standards set forth in the Federal Water Pollution Control Act; OR that the company has failed to comply with any administrative order or judicial order or consent decree issued under the National Contingency Plan for oil discharges, CERCLA (the Comprehensive Environmental Response. Compensation and Liability Act), RCRA (the Resource Conservation and Recovery Act), or any applicable state statute.

The problem is Mr. Chairman, these provisions of law do *not* currently set forth any substantial objective standards under which to evaluate the cleanup efforts of a company. For example, the referenced provisions of the Federal Water Pollution Control Act refer only to the proper' removal of oil. The other referenced provisions are equally vague My point here is that the On-Scene Coordinators who are evaluating cleanups for the Commandant or the Administrator must be provided with a clear set of standards on which they can base their recommendations to their superiors.

Other questions which will need to be addressed pertain to the scope and timing of the Coast Guard and EPA notifications to Treasury. For example, if a Coast Guard Commandant determines that a company has failed to comply with the Water Pollution Control Act during a given year, when must a notification occur—immediately? within 60 days? within one year? In addition, when the notification does occur, may it relate back only to deductions taken in the current tax year? the immediately preceding tax year? several tax years. These are all questions which need to be carefully considered.

Having raised these issues, I want to reiterate my support for this concept, and I commend Senator Reid for his interest in this matter.

Thank you for the opportunity to testify on this bill.

Dark Dispair Tense Homers' Anger at Spill

By CHARLES WOHLFORTH
Daily News reporter
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HOMER — Two months after the oil spill of the Exxon Valdez brought a wave of inspired fury to Kachemak Bay, people here are still angry and still don't think Exxon is doing enough to clean up their water or their beaches. But now the anger is dark and without hope.

State and federal officials agree with residents and cleanup workers that Exxon has devoted too few workers and too little equipment to clean up this part of the Kenai Peninsula. Soon the number of beach workers will be down to about 100; 175 miles of beaches in the area were fouled by the spill.

Exxon is employing thousands to clean beaches in Prince William Sound with sea water forced through hoses. Here, most of the workers are still scrubbing rocks with rags.

Workers in Windy Bay, on the south side of the Peninsula, were using shovels effectively, but the shovels were taken away and the workers now must get down on their knees and scoop up oil with their hands.

Several were in Port Graham this week, back for a rest. Jeff McMullen, Greg McMullen, Pat Norman and Ephim Anahonak Jr. all returned recently from Windy Bay.

"We can only use our hands," said Anahonak. "We can't use no kinds of tools no more. It's hard to pick up just in gloves. It goes through your fingers. We can't even pick up any gravel."

The workers at first used shovels to pick up oily debris, which they bagged by the ton, but digging was stopped until Exxon experts could review each beach and determine the best method for cleaning it.

The team has been slow to get its work done, however, because it followed a plan of looking at each beach in sequence instead of going to the worst beaches first, Exxon officials were told by state and federal officials in a meeting Thursday.

Besides, until recently local Exxon officials were firmly committed to a policy of using no equipment on the beaches. Pat Norman, a beach worker who is also president of the Port Graham Village Corp., said his supervisors told him they could not have shovels because Exxon officials ruled out mechanical equipment. "They say a shovel is mechanical," he said.

Residents, city leaders and Department of Environmental Conservation officials fought for weeks in daily meetings to push Exxon to consider using better tools and cleaning deeper. The meetings about "type A versus type B cleaning" would last for hours and often led to shouting. The sides still don't agree on whether "type A cleaning" means not using machines, or not going below the surface, or both.

Lester Leatherberry, who represented the DEC at the meetings, admits he also lost his temper.

"At times, for some reason, when real good productivity has been accomplished, someone shuts them down," he said. "They can see oil on a beach, they know it needs to be cleaned up, and yet someone tells them they have to stop because it's the wrong type. We've had some crews who have become very frustrated because they are picking up a lot of oil — in some cases more than someone wants them to. A supervisor will come along from another group and make them stop because they say they're doing the wrong level of cleanup.

"Never (before) have I seen anyone go into a beach and clean up a little oil, and then leave and say, 'That's the type of cleanup I'm allowed to do,' and leave visible oil. And that's what they were doing — leaving visible oil that was lifted off by the next high tide and impacting other beaches."

Exxon Area Supervisor Glenn Raz said the crews would only leave such dirty beaches if they had to go to beaches that more urgently needed cleaning.

But several Windy Bay workers said they were pulled off their work for no reason they could determine.

Exxon threatened to leave town if the meetings didn't improve, Leatherberry said.

"They called us into a meeting and said, 'If you guys don't start being nice and playing ball with us, we'll take our ball and go home,'" he said.

Raz said, however, that he appreciates the resource agencies' advice.

Exxon did finally agree to try mechanical cleanup methods, and Wednesday they conducted a test on a

Please see Page C-3, CLEANUP

CLEANUP: Homer's residents still angry

Continued from Page C-1

beach in Tonsina Bay, on the south side of the Peninsula. There was general excitement about the test, but the equipment tested was the same as that which has been used in Prince William Sound for more than a month.

Yet it isn't expensive equipment that is needed, workers said, just shovels. "Shovels and man power is all it is going to take to get it off," said Jeff McMullen, one of the Port Graham workers. "Let us do it. Let us do the cleanup. When we were able to get out there and work on it, we were cleaning up a lot of oil."

Anahonak said beaches are cleaned but not boomed off, so more oil washes ashore and the area has to be cleaned again.

"Every time we have a successful plan they stop us from doing it," he said. "It's Exxon, but we don't really know who Exxon is."

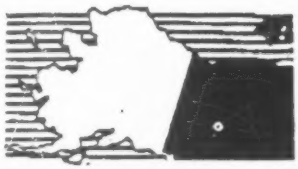
No one other than Exxon seems to think it is expending enough effort to finish the job by winter, but few can say why has Exxon has put so much less effort into cleaning the beaches here than elsewhere.

Raz said there are not enough large vessels for workers' berths, so the Prince William Sound area, which was hit harder, has taken most of them.

But Exxon has dismissed many fishing boats it had chartered, and consequently is able to provide fewer berths for workers than it could before. Even Exxon's own work force figures, which Leatherberry said were not always borne out by checks of work sites, show a decline in the work force recently.

After he visited Homer and Kodiak recently, Coast Guard Vice Adm. Clyde Robbins, the federal on-scene coordinator, said much more could be done in the area without taking away from the Sound.

"Exxon hasn't been doing any strenuous cleanups there," he said. "Those people are very concerned, and rightfully so."



The problem, Robbins said, is that Exxon has not acquired enough storage capacity for the oily debris that workers recover.

Leatherberry and Lt. Jerry Wilson, the executive officer of the Homer Coast Guard office, said Exxon seems to simply lack interest in picking up oil here.

"While most people would be getting out there and trying to pick up as much oil as they could, it has been a slow, not methodical, but disinterested response," Leatherberry said. He said the cleanup improves markedly when visitors arrive to watch.

Cleanup worker Lowell Miller said his crew was given clean orange work suits and flown by helicopter — the crew normally travels by boat — to a beach where a USA Today film crew was waiting. Soon after the film crew left, so did the cleanup crew.

"Exxon was just definitely putting on a show, telling people we were being taken care of," he said.

But cleanup workers also blame the DEC, the state Division of Parks, and other government agencies in general. They say government monitors show up at work sites and give conflicting instructions.

Coast Guard Commander Will Griswold, who is new in Homer, said he will try to consolidate authority to reduce the confusion.

"Sometimes democracy is not the best form of government," he said. "The trains ran right under Mussolini. They don't run right with Amtrack."

He said the fights are a thing of the past now. "There were some disruptive people here before," Griswold said, "but we're a team now."

Not many people here share Griswold's optimism. Residents say they've seen officials come and go, but the cleanup does not improve.

Kachemak Bay residents have been angry since two weeks after the spill, when they realized that oil was headed their way. Now only the anger has changed.

At first, it was expressed in a flurry of activity. Communities built their own floating booms with logs and there was a sense of camaraderie. But now they feel that the situation has gotten progressively worse rather than better — the cleanup is ineffective, fishing grounds have begun to be closed by oil, and subsistence use of the ocean has stopped.

Homer Mayor John Calhoun shares the cynicism that has replaced hope in his community. He said the cleanup still is clearly inadequate, but there is no means to make Exxon do better. The construction executive said he has learned that corporations have no conscience.

"There is no threat so great you could put on this corporation that could make it perform," he said. "You give 10 pounds of pressure and you get an ounce of movement. That's worthwhile. But the main thing now is keep the same thing from happening again. I don't think we can ever let it happen again that if there's a spill of any size that the perpetrator is in charge of the cleanup."

For a month Calhoun ran the voluble daily meetings, but a counselor told him to stop his involvement in the spill.

"I wasn't able to sleep at night, I became very short tempered, extremely anxious," he said. "I went through a period there that I couldn't talk about it without choking up. As time went by, it got better. But I still can't think about parts of it."

In Seldovia, some residents who were Exxon's most spirited adversaries are losing their will to go on fighting.

"I was in tears yesterday," said Jennifer Dilley. "People have given up."

COMMUNICATIONS

STATEMENT OF THE AMERICAN MINING CONGRESS

The American Mining Congress is an industry association representing all segments of the mining industry. It is composed of (1) U.S. companies that produce most of the nation's metals, coal, industrial and agricultural minerals, (2) companies that manufacture mining and mineral processing machinery, equipment and supplies, and (3) engineering and consulting firms and financial institutions that serve the mining industry.

We appreciate this opportunity to comment on S. 771, the Oil Spill bill. As introduced, S. 771 would, in general, disallow deductions for any applicable oil spill or hazardous substance cleanup costs. The bill does allow for two exceptions to the general prohibition of tax deductions for cleanup costs. The first exception would require a company to obtain Environmental Protection Agency (EPA) or U.S. Coast Guard "certification" that the company's cleanup work was a "good faith effort" to comply with applicable Federal cleanup requirements. The second exception would be if the discharge was caused by (1) an act of God, (2) an act of war, (3) an act or omission of a third party, or any combination of the aforementioned.

The American Mining Congress believes that S. 771 will cause far more damage to the environment than it attempts to prevent by creating perverse incentives that will promote the very behavior and actions it seeks to prevent. In addition, AMC believes the bill promotes unsound tax policy and is an inappropriate use of the tax code. AMC urges the committee to reject S. 771.

AMC believes that S. 771 will actually harm the environment by causing both unnecessary delays in hazardous waste cleanup efforts. In many cases, prompt action is needed to contain a hazardous waste discharge. However, rather than encouraging prompt cleanup action, the bill creates an incentive for inaction and delay. In order to protect the ultimate deductibility of cleanup and associated costs, companies may wait for specific guidance from EPA or the Coast Guard in order to gain some degree of certainty that a compliance certificate is forthcoming rather than taking immediate action to combat the discharge. Thus, valuable time may be lost in the early stages of the cleanup effort.

Another problem with the bill is the reliance on the ambiguous phrase "good faith effort" when determining if a compliance certificate should be granted. What constitutes a good faith effort to comply with Federal cleanup requirements is subject to a great deal of controversy.

For instance, the Comprehensive Environmental Response, Compensation and Liability Act (Superfund) Section 121 declares that Superfund cleanups shall be done in accordance with "applicable, relevant, and appropriate requirements (ARARs)." We are not certain that anyone understands ARARs any better today than they did two and a half years ago when the ARARs provision was added to Superfund. The end result is more delay as companies and Federal agencies argue about what action should be taken to address the problem.

From a tax policy standpoint, S. 771 is deficient because it (1) challenges the validity of repair and restoration costs as necessary business expenses, and (2) imposes a penalty that will discourage the actions it intends to promote.

S. 771 is a major departure from long standing tax policy of allowing deductions for necessary business expenses. Cleanup costs associated with the accidental discharge of hazardous waste are conceptually no different than repair or restoration of other types of damaged property which are properly deducted as necessary and ordinary business expenses in determining taxable net income. Clearly, the cleanup of an environmental accident is a necessary, albeit unfortunate, cost of producing income and should remain deductible in full.

The loss of a deduction for cleanup costs is a severe penalty. It actually creates a perverse incentive for firms to spend as little as possible to combat a discharge and/or to delay action until detailed guidance is obtained from the appropriate agency in order to protect the deductibility of the cleanup costs. This is exactly the opposite of the behavior that the bill intends to promote.

Another unintended consequence may be the stifling of new and innovative approaches to combating hazardous waste discharges. Why should a responsible party take a chance on a new method or technology, thus risking not being able to convince a government agency that the innovation is truly a "good faith effort?"

The bill is an inappropriate use of the tax code because it intends to serve as another enforcement tool for environmental laws. Penalty provisions of the code should properly focus on encouraging compliance with tax laws, punish non-compliance with those laws and not stray into other legal areas. Enforcement of environmental laws should properly be dealt with in the underlying environmental statutes.

Environmental laws such as Superfund contain penalty provisions, both civil and criminal. If these provisions are deemed inadequate for the task, then those deficiencies should be addressed in those laws and not by tampering with the Internal Revenue Code.

The bill would create new problems in that it involves non-tax agencies in the determination of tax liability, thus adding more uncertainty to the Internal Revenue Code. Cleanup efforts can extend well past a taxpayer's taxable year end. EPA and/or Coast Guard may delay for years (perhaps for valid reasons) in the issuance of compliance certificates and the denial of certificates will be challenged in court. These added problems on top of nearly constant change in tax laws in recent years make it more and more difficult for taxpayers to manage their tax affairs and settle their tax liabilities with any degree of certainty and confidence. This leads to further erosion of the public's confidence in the integrity of the tax system.

AMC appreciates the opportunity to comment on S. 771 and urges the Committee on Finance to reject amendments to limit or deny deductions for costs to clean up discharges of hazardous substances.

U.S. CHAMBER OF COMMERCE

July 12, 1989.

Hon. LLOYD BENTSEN, *Chairman,*
Committee on Finance,
U.S. Senate,
Washington, DC

Dear Mr. Chairman: The U.S. Chamber of Commerce, the world's largest federation of businesses, chambers of commerce, and trade and professional associations, believes strongly in the need to protect America's natural resources and environment. It believes that business has an important role to play in this process. When tragic environmental accidents occur, the companies responsible should bear the appropriate expense of repairing the environmental damage.

With these principles in mind, the Chamber submits this statement opposing S. 771 (and Amendment Number 116 offered to and withdrawn from the Dire Emergency Supplemental Appropriations bill on June 1, 1989). S. 771 amends the tax code to disallow a deduction for the cleanup costs from an oil spill or the discharge of a hazardous substance unless government officials certify that the taxpayer has made a good faith effort to comply with certain Federal laws. S. 771 is bad tax policy and is likely to discourage thorough environmental cleanups.

The Chamber supports efforts to ensure that everything possible and appropriate is done to prevent the occurrence of environmental disasters. However, when these disasters do occur, businesses should know that they will not be penalized for acting swiftly and effectively to control and repair the damage.

By providing that in certain cases expenses incurred during the cleanup of an oil spill or the discharge of hazardous substances will not be treated as a cost of doing business, S. 771 will discourage, rather than encourage, a thorough cleanup.

Under S. 771, the more a company spends to repair damages, the more income taxes that company may pay. S. 771 imposes no burden on the irresponsible company that fails entirely to clean up a spill but penalizes the company that attempts to conduct a cleanup and falls short of a standard determined after-the-fact by the Coast Guard Commandant or the Environmental Protection Administrator.

The cleanup of a spill is a legitimate business expense. Businesses should be permitted to deduct that expense. Section 162 of the Internal Revenue Code limits deductions to ordinary and necessary business expenses and, thus, ensures that inappropriate expenses are not deductible.

S. 771 is an attempt to use the tax code as a means of punishing those companies that cause damage to the environment. The tax code is not the appropriate place for such punishment. If environmental damage is the result of negligence or intentional misconduct, existing state and Federal laws provide for the appropriate punishment. Similarly, though the Chamber believes that spill cleanups should be conducted according to Federal and state regulations, any penalty for failure to comply with those regulations should be determined by the regulations themselves, not by the tax code.

The corporate income tax is designed to be assessed only on the net profits of businesses after allowance has been made for the expense of doing business. Denial of the deduction for the expense involved in a spill cleanup is contrary to this policy and is a step toward a gross income tax.

Traditionally, in cases where a tax deduction is disallowed, the rationale has been to discourage certain conduct. S. 771 reverses this policy and denies a deduction for conduct that the government wishes to encourage.

S. 771 will impose a disproportionately heavy burden on smaller companies. Though large and financially healthy companies may be able to bear the financial burden of both a cleanup and the tax penalty imposed under S. 771, small companies very likely would not be able to do so. In addition, a company that is not in good financial health may choose not to bear the burden of a thorough cleanup, knowing that a tax deduction for the cleanup costs may be denied.

In addition to the broad concerns outlined above, the Chamber is concerned with the procedure outlined in S. 771. The legislation denies a taxpayer a deduction for any applicable oil or hazardous substances cleanup costs unless the taxpayer provides certification from the Coast Guard or the Environmental Protection Agency (EPA) that it has made a good faith effort to comply with the standards of the Clean Water Act (for oil spills) or the standards of the Comprehensive Environmental Response, Compensation, and Liability Act (for the discharge of hazardous substances).

There are several problems with this procedure. First, there appears to be no avenue of appeal following a denial of certification and no clear forum for resolving contested decisions by the EPA or the Coast Guard. Second, the legislation appears to provide no opportunity for the taxpayer to take remedial action and to correct a negative determination by the EPA or Coast Guard. Third, the process is subject to politicization due to the nature of the political appointments process and the high degree of publicity that can surround the incidents addressed by S. 771.

The Chamber urges the Committee on Finance to reject the tax code changes proposed in S. 771 and requests that this letter be included in the hearing record.

Sincerely,

ALBERT D. BOURLAND.